

**Nurse Teacher Perceptions of the Practice Architectures
for Nursing Education in Kenya**

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ABSTRACT

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This study explores nurse teacher perspectives on the availability and adequacy of the requisite infrastructure for nursing education in diploma level nurse training institutions in Kenya, and how the existing infrastructure influence the teacher's work. The nurse teachers' descriptions of their work conditions are compared to the expected practice conditions as prescribed by the NCK *Training and Accreditation Standards* (2014). The theory of practice architectures is used to map how the prerequisites are connected to teachers practices and, subsequently, the outcomes of education.

Qualitative data was collected through policy document review and use of questionnaires to collect perspectives of nurse teachers in diploma level nurse training institutions in Kenya.

The findings show that there are opportunities for improvement of teacher preparation and development programs and the nurse training curriculum. Material-economic resource constraints remains a major challenge to nurse training institutions in Kenya and creative nurse teachers are needed to come up with sustainable solutions. Improved partnership and collaboration can also help to mitigate resource shortages for improved nursing education.

The nurse teachers' recommendations provide a great starting point for enhancement of nursing education in Kenya. Further participatory research on how the practice architectures affect teachers' practices will provide opportunity for all stakeholders to communicate and take collective action to improve practice architectures, and outcomes of nursing education.

Keywords: nurse teacher perspectives, practice architectures, nursing education as a practice

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
AMREF	African Medical and Research Foundation
AVNS	AMREF's Virtual Nursing School
BEME	Best Evidence Medical Education
CDA	Cultural-discursive architectures
CPD	Continuous professional development
HIV	Human Immunodeficiency Virus
ICN	International Council of Nurses
ICT	Information and communication technology
KRCHN	Kenya Registered Community Health Nurse
MEA	Material-economic architectures
NCK	Nursing Council of Kenya
NGO	Non-governmental organization
PhD	Doctor of Philosophy
SPA	Social-political architectures
USA	United States of America
WHO	World Health Organization

1 INTRODUCTION

1.1 Background of the study

Nursing education must evolve alongside the evolving healthcare landscape and needs to constantly adapt to technological and global advances in both healthcare and education. Nurse educators and nurse training institutions need to continuously learn and implement novel ways of teaching while maintaining relevant local and traditional practices. In addition to preparing more nurses, nursing educators are expected to anticipate and prepare nurses for changes in healthcare needs and interventions as a result of aging populations, new medical conditions, and advances in healthcare technology (Rich & Nugent, 2010).

Since the days of Florence Nightingale, the nursing profession has steadily gained recognition and respect for nurses work (Potempa, Redman, & Landstrom, 2009; Rich & Nugent, 2010). Nursing encompasses autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people. Advocacy, promotion of a safe environment, research, participation in shaping health policy and in patient and health systems management, and education are also key nursing roles. (ICN, 2002). Within the total health care environment, nurses collaborate with other health professionals in planning, implementation, and evaluation to ensure the adequacy of the health system (ICN, 1987). Today, countries like the USA put more emphasis on graduate education for nurses because to engage in league with other healthcare professionals and to be agents of change in healthcare, nurses need higher education to develop the requisite dispositions. For example, they need to learn interprofessional communication and collaboration skills (Rich & Nugent, 2010).

In the USA, nurses voices are heard in major healthcare decisions, and nurse practitioners are recognized as primary care providers (Rich & Nugent, 2010). In this regard, Kenyan nurses are still struggling to get their voices heard in healthcare policy making platforms which are dominated by medical practitioners. As much as nurses consider their profession autonomous and collaborative, nursing is subordinated and mainly portrayed as a support occupation for the medical profession. An example is the contested Health Act 2017 which locks nurses out of top management positions in public hospitals in favor of doctors. Despite nurses being key stakeholders in healthcare, their input in the drafting of the law was overlooked, and the new law is designed to strip them of any management positions they currently hold in both county and national government. Consequently, the Kenya National Union of Nurses filed a petition in the high court to suspend the implementation of the law which they termed discriminatory (Kadida, 2018; Ogemba, 2018).

To increase recognition for the nursing profession, we must prepare nurses who can not only provide excellent nursing services, but also improve the image of the profession in healthcare and the wider society. As the focus of this study is the support infrastructure for diploma level nurse training in Kenya, the following section highlights the different levels of entry into the nursing profession that currently exist in the Kenyan context.

1.1 Trends in nursing education in Kenya

Currently there are three entry levels for nurse training in Kenya. The Enrolled Nursing Certificate and Registered Nursing Diploma levels of training are offered in medical training colleges while Registered Bachelor of Science in Nursing degree training is offered in universities. These different levels are indicative of the historical development of nursing education in Kenya.

The Enrolled Nursing Certificate, the standard minimum nursing qualification in Kenya, is the oldest of the three levels, and takes two and a half years to complete. Enrolled nurses learn to manage simple ailments and

provide basic care as instructed by doctors and registered nurses. For instance, they can administer medication but are not taught about the rationale behind the prescriptions (Nguku, 2009; Wakaba et al., 2014). The Kenya Registered Community Health Nurse (KRCHN) diploma program, the focus of this study, takes three and a half years to complete. It began in 1987 to prepare nurses to provide comprehensive care to communities. It prepares nurses in all aspects of clinical care, including specialized fields, such as mental health and infectious diseases. The nurses also learn to conduct nursing research and manage hospital wards (Nguku, 2009; Wakaba et al., 2014). The Bachelor of Science in Nursing degree program was introduced in 1994 and is the highest entry level training. It is a five-year comprehensive training program, including a one-year internship, and was designed to prepare highly skilled nurses, managers, teachers, and researchers (Nguku, 2009). Post basic nurse training levels available in Kenya include higher diploma, masters, and doctorate levels. There are more and more nurses with master's level education and a few PhDs.

In 2001, due to increasing complexities in nursing care needs from chronic conditions such as HIV and AIDS, the Ministry of Health and the Nursing Council of Kenya (NCK) adopted a policy to upgrade the nursing skills of the then approximately 22,000 enrolled nurses to registered nurse skill level by 2010. The Kenyan nursing profession has made good progress with the large-scale upgrading certificate nurses to diploma level (Nguku, 2009). However, the related plan to phase out training of enrolled nurses is yet to be implemented. In 2014, there were 18,625 nurses deployed in the public sector, with Kenya Registered Community Health nurses and Kenya Enrolled Certificate nurses comprising 45% and 34% respectively (Wakaba et al., 2014).

1.2 **Statement of the problem**

The interest in nurse educator perceptions of the support infrastructure for nursing education in Kenya is due to challenges experienced by my colleagues and myself while working as a nurse teacher in the KRCHN program. There

appears to be some shortfalls in setting up the prerequisites for implementation of the nurse training program as presented below.

1.2.1 Challenges in teacher preparation and continuous professional development

Qualification as a nurse teacher in Kenya is similar to the practice in places such as Australia whereby one needs only to have a higher qualification than the level of the program in which they can teach (McAllister & Flynn, 2016). The NCK prescribes minimum educational attainment and clinical practice experience requirements for nurse teachers but there are no standardized or specified training programs for educational roles. To qualify as a nurse teacher for diploma level institutions, one must have a bachelor's degree in nursing or a diploma in nursing with a post-basic diploma in nursing or medical education. In addition, nurse educators need a minimum of two years' clinical experience (NCK, 2014). The nurse teachers are expected to take on the complex responsibility of a nurse teacher which consists of several interdependent roles, among them teaching, mentoring, clinical supervision, clinical practice, research, administration and leadership. The question arises as to whether these nurse teachers are adequately prepared for these responsibilities, and whether they have the necessary support infrastructure to for the implementation of the nurse training program.

Currently there is no formal mentorship program for new nurse educators in Kenya. It is assumed that the superiors will apply general staff management principles to integrate novice nurse teachers in their new roles. This coupled with limited opportunities for continuous professional development can hinder the teachers' progressive development. Rich & Nugent (2010) write that new teachers may get stressed or frustrated if they do not get good support in the transition to becoming nurse educators. They observe that new teachers may also get discouraged when they unexpectedly receive negative evaluations from students. This was one of my experiences as a novice teacher, and one shared by at least two colleagues who went through the disheartening experience of

receiving negative student evaluation. The student comments centered around the teacher not knowing how to engage the students or make the classes interesting, hence falling short of helping the students to learn. It can be quite a blow to the teacher's self-esteem, especially because the teacher feels they did their best to prepare and deliver the course. To compound the problem, these evaluations usually come at the end of the course, when it is too late to remedy the situation. Mentorship can help new teachers to manage the workload and complex roles better (Gerolamo & Roemer, 2011) but is not always readily available (Gerolamo & Roemer, 2011; Rich & Nugent, 2010).

Opportunities for in-service training on emerging teaching methods, for example simulation, were not easy to secure and teachers relied on their own personal initiative and resources to learn about these. This sometimes led to feelings of inadequacy or being left behind changing times. Selecting and preparing appropriate instructional methods and media from the broad range of conventional and constantly emerging newer ones could be a daunting task due to limited expertise, time and resources. One example is when our school received high-fidelity manikins, and the teachers had to learn by themselves how to operate, maintain, and utilize the equipment, and how to prepare and deliver simulation teaching. For these reasons, these expensive resources end up being underutilized. Bryant & Ogle (2015) describe a worse situation in their nursing school in the USA, when they had manikins stay in storage for several years because there was no faculty training about their operation. According to Laerdal Medical (2018), eighty percent of simulators are underutilized and one of the reasons for this is shortage of faculty trained in simulation.

1.2.2 Insufficient resources

There is increased demand for nurse training in Kenya amidst insufficient resources. Most nursing schools do not have enough resources and the congestion in teaching hospitals make it difficult to find clinical placements for students. This problem is in part due to shortages in infrastructure, resources,

and staff qualified to supervise students in health facilities, and in part due to increased number of students training for medical professions (Nguku, 2009). The NCK has in the recent years reviewed and approved more and more facilities for clinical training and continues to advise facilities on how to improve to training standards (Nguku, 2009). Resource constraints for nursing education is a global problem affecting even developed countries like the USA where there is increased demand for primary healthcare due to aging populations, and increasingly complex and chronic medical conditions (Potempa et al., 2009). According to Rich & Nugent (2010), nurse training institutions in the USA are experiencing shortages in faculty and physical space.

Faculty shortages cause heavy workload for nursing faculty who are expected to perform several responsibilities. Gerolamo & Roemer (2011) write that heavy workload and balancing the competing responsibilities of nurse faculty is a challenge shared by nurse educators in different parts of the world. Given that each hour of direct teaching requires about three hours of preparation (Gerolamo & Roemer, 2011), most working hours are spent preparing for instruction, assessing student performance, and administrative work, leaving little or no time for other professional commitments like research, clinical practice, and collaborative peer work. A study conducted by Moulton & Speaker (2004) among faculty of eight nursing programs in North Dakota, USA in 2004 revealed that nurse faculty spent an average of 55 hours a week performing their responsibilities in classroom and clinical teaching, mentoring, administration, research, and service. About half of the nurse educators reported feeling overwhelmed by the heavy workload and not having time to conduct research. The study also found that heavy workloads led to challenges in maintaining clinical competence. An investigation by The National League for Nursing and the Carnegie Foundation in the US in 2005-2006 revealed that work load is a major factor on why nurse faculty are likely to leave their current job (Kaufman, 2007), further compounding the problem of faculty shortage. As much as it is widely understood that there is need to devise more effective ways

of managing the complex and heavy workload of nurse faculty, there appears to be no documented literature on the subject (Gerolamo & Roemer, 2011).

While nursing research is increasingly used to inform nursing education and practice in developed countries like the US (Rich & Nugent, 2010), there is little nursing research done in Kenya, and Kenyan nurses rely heavily on studies done abroad to inform nursing practice or education. Most healthcare research in Kenya is conducted by medical practitioners, with nurses working mainly as research assistants. There is a need for improved knowledge management for collective learning among nurses and nurse educators, for example regarding advancements in learner-centered pedagogical approaches. The current student feedback tools are designed to collect student feedback about the subject content and teacher performance during instruction rather than student learning experience while student learning is examined using written examinations which may not help in identifying how students can learn better as individuals or as a group. In the movement towards Best Evidence Medical Education (BEME), various studies are being conducted to evaluate the effectiveness of different teaching approaches for development of different domains of knowledge. It is still a challenge to find such studies conducted in Africa or Kenya. It is not clear whether nurses do not conduct research because of inadequate capability, time, or resources, or a combination of these factors.

1.2.3 Other challenges

The diploma level nurse training curricula is implemented via block system with allocation of specified teaching hours for each subject and topic. Students spend a total 40 of the 168 weeks of training in block, that is when they attend theory lessons in school. There are six blocks which last between two to sixteen weeks, and these alternate with clinical placements. The rest of the time is spent in clinical learning in health facilities. Because of the limited block periods, teachers often resort to teacher-centered methods to deliver the subject content within the allocated time. Perhaps due to the heavy workload or scar-

city of resources, interinstitutional collaboration is rare among institutions offering diploma training in Kenya, except for projects run by the NCK and AMREF's Virtual Nursing School (AVNS), which is engaged by NCK to support institutions in developing e-learning programs for nurses to upgrade their studies.

Nurse educators in Kenya seem to face significant challenges including heavy work load and competing roles of nurse faculty, limited opportunities for collaboration, and challenges in implementing a student-centered curriculum, yet little research examines the conditions of nurse education in Kenya. Research will help define the problems and chart possible ways to improve nursing education.

1.3 Rationale for the study

To purposefully address the challenges outlined above, nurse educators and gatekeepers of the nursing profession need to collectively assess and agree if we are in fact approaching nursing education in the best way, and if not, provide insights on how we might develop better practices. According to Kemmis (2013), educators and educational institutions must continuously revise practice conditions to discern required adjustments for improved practices, and ultimately improved educational outcomes. For nursing education, these revisions are especially important in the changing circumstances and healthcare needs of the 21st century (Rich & Nugent, 2010). This study aims to assess how current practice conditions in Kenya influence nursing education and its outcomes. The study results will contribute to the ongoing discussion around continuous review and remodeling of nursing education.

1.4 Purpose of the study

This study is conducted to describe the current practice conditions within institutions offering KRCHN diploma training in Kenya and to explore whether and how they foster nursing education. In this critique, the researcher looks at the

expected practice conditions as prescribed by the NCK *Training and Accreditation Standards* (2014) and asks nurse teachers to share their perspectives on the actual conditions in their work institutions and how the conditions influence their work. The theory of practice architectures (Kemmis, 2013) provides the framework upon which the nurse teacher reports are mapped to describe the practice conditions and how the conditions enable or constrain nursing education. The findings ultimately inform recommendations for improvement of nursing education in Kenya.

1.5 Study objectives

This study aims to investigate nurse educator perceptions on the status and adequacy of prerequisites or support infrastructure, also termed practice architectures for nursing education. The specific objectives are:

1. To describe nurse teachers' perceptions on availability and adequacy of architectures for nursing education in their work institutions
2. To assess whether and how the architectures support, limit, or constrain nursing instruction through the teachers' perceptions
3. To gather nurse educators' recommendations on possible solutions to improve practice conditions for nursing education.

2 LITERATURE REVIEW

Like other professional training programs, nurse training depends upon certain prerequisites and infrastructure such as availability of teachers, a training curriculum, physical space, and learning resources. The literature review focuses on the requirements for nursing education and the conditions that nurse educators contend with in practice.

2.1 Nursing teacher preparation and development

Faculty is a key factor in the preparation of new nurses. To keep the nursing profession on the forward momentum, nurse educators need to design cutting edge nursing education programs with excellent clinical experiences to prepare nurses who can keep the profession in the forefront of the healthcare system. This calls for preparation of creative nurse educators who can not only teach nursing skills but also address the existing challenges in the nursing field and prepare nurses and the profession for the future. Nursing teachers as leaders spearhead the translation of scientific knowledge that links nursing education to professional practice in the delivery of high quality health care (Bvumbwe & Mtshali, 2018). Nurse teachers also need to keep their clinical expertise up to date because they must become proficient in using new methods, so they can teach the same to students (Rich & Nugent, 2010). According to Potempa et al. (2009), the limited number of nurses with doctoral level education limits the capacity of nursing as a profession to educate new nurses and to make scientific and leadership contributions to healthcare systems. Today, different countries have different pathways for preparation of nurse teachers, and sometimes this is a problem due to and “inconsistent” and “confusing” educational options (Rich & Nugent, 2010 p. 228).

Technology is changing the way teachers and students interact in the learning environment. Simulators and other cutting-edge technologies are used more and more in lieu of, or to supplement real patients in teaching of

clinical competencies (Rich & Nugent, 2010). More nurse training institutions are offering technology-supported distance learning programs to allow nurses to upgrade their studies while working full time (Nguku, 2009; Rich & Nugent, 2010) thus minimizing the opportunity costs of continuing education. In Kenya, AMREF's Virtual Nursing School, in collaboration with other nurse training schools, has been offering e-learning for nurses to upgrade their studies since 2007 (Nguku, 2010). These changes in nursing education practice mean nurse teacher preparation curricula must be revised appropriately and practicing nurse teachers must update their skills through continuous professional development and lifelong learning. For instance, to adopt innovative teaching methods like simulation, teachers need training in aspects such as equipment operation, the simulation process, including scenario-writing, simulation, debriefing, and evaluation (Bryant & Ogle, 2015).

2.2 Nurse training curriculum

The curriculum is at the center of nurse training program and requires careful consideration of its objectives, content, and implementation modalities. National nursing regulatory authorities usually define nurse training syllabi and approve the training curricula of institutions which offer nursing education. It is expected that nurse training should prepare nurses to engage in the general scope of nursing practice, carry out health care teaching, participate fully as a member of the health care team, supervise and train nursing and health care auxiliaries, and to be involved in research (ICN, 1987). Although there are shared international nursing values, philosophies, and subjects, different countries and nurse training institutions have discretion as to the depth and scope of their curriculum content. This leads to inconsistent and varied approaches to integrating different subjects in nurse training curricula (McCarthy, Trace, & O'Donovan, 2014).

The inconsistencies in nurse training curricula from one country to another present a challenge to the definition of professional standards and

nurse mobility and raise issues around patient safety and the quality of nursing care (Satu, Leena, Mikko, Riitta, & Helena, 2013). Following the Bologna Declaration in 1999, the European Union countries have been working to harmonize their nurse training curricula. One of the key tasks of the harmonization process has been the definition of specific competence areas in nursing. Some competence areas identified include professional and ethical values and practice, nursing skills and intervention, communication and interpersonal skills, knowledge and cognitive ability, assessment and improving quality in nursing, professional development, leadership, management and teamwork, and research utilization (Satu et al., 2013). The diploma nurse training curriculum in Kenya is still content driven, but there is a growing conversation around competency-based education. Bvumbwe & Mtshali (2018) found that countries within Sub Saharan Africa, Kenya included, are prioritizing curriculum reforms from content driven curriculum to competency-based curricula that are responsive to primary health care and that emphasize inter-professional collaboration in health management.

Being a skill-based profession, nurse training involves theoretical and clinical training. Balancing classroom and clinical learning can be difficult and research and evidence is needed to develop flexible curricula to keep up with changes in healthcare (Rich & Nugent, 2010). Rich & Nugent (2010) also suggest that due to inadequate clinical placement sites, educators should replace the block system for teaching specialty content with a system that focuses on "...competencies, concepts, patterns of care and management of critical situations." (p. 231). They also advise that nurse educators should work in close partnership with clinical nurses to design better clinical training programs.

The Lancet Commission and the Global Health Workforce Alliance reported that professional education has not kept up the pace of health care challenges leading to a mismatch between competencies and patient and population needs (Frenk et al., 2010). An example is a study by Smith et al. (2016) which found that even though HIV is a major health problem in Kenya,

and the Kenya national guidelines for HIV care recognizes nurses as the mainstay of HIV service delivery, almost a third of the practicing nurses had not been trained in essential HIV care and treatment. The increasing emphasis on primary care, emerging health challenges, increasing disease burden in Sub Saharan Africa demand curriculum reforms as relevant to population needs (Bvumbwe & Mtshali, 2018).

2.3 Resource requirements for nursing education

Nursing education requires investment in a diverse range of resources, including physical and technological infrastructure, human, and time resources. Like other Sub Saharan African countries, lack of infrastructure and material resources pose a big challenge to nursing education in Kenya. This problem is compounded by enrollment of more students in response to growing population and disease burden (Nguku, 2009; Bvumbwe & Mtshali, 2018). Investment in infrastructure is expected to facilitate better quality education and training of more students (Bvumbwe & Mtshali, 2018). The increasing shortage of clinical placement sites and patient safety concerns means nurse educators must devise innovative ways of clinical teaching such as virtual simulation, clinical simulators, and standardized patients (Bryant & Ogle, 2015; Bvumbwe & Mtshali, 2018). Technology also enable students to experience clinical scenarios that they would normally not encounter in normal clinical setting (Bvumbwe & Mtshali, 2018).

Increased use of technology has driven up resource requirements and the cost of nursing education, for example, simulation equipment include basic to moderate and high fidelity manikins (Bar-on, Yucha, & Kinsey, 2013; Bryant & Ogle, 2015). Other costs associated with simulation programs include construction or remodeling, furnishings, high-tech equipment, computers, software, IT infrastructure, technical staff, supplies and maintenance costs (Bar-on et al., 2013). Use of methods like simulation may require students to be taught in small groups, which necessitates more physical space, time and

faculty numbers. Incorporating innovative teaching methods into the curriculum also requires resources for teacher skill development (Bryant & Ogle, 2015).

Today there is global nursing faculty shortages (Potempa et al., 2009; Rich & Nugent, 2010; Bvumbwe & Mtshali, 2018) hence the need to invest more in training nurse teachers. Faculty shortages increase teacher workload and means teachers must prioritize their tasks. Gerolamo & Roemer (2011) write that institutional mission influence teacher workload in the various areas of responsibility. Depending on their mission, nurse training institutions may place more emphasis on teaching, research, or clinical expertise. Even though teaching is the most time-consuming task for nurse faculty, many nurse teachers would prefer to reduce clinical practice and supervision hours (Gerolamo & Roemer, 2011). Faculty workload make it difficult to maintain clinical practice alongside teaching. Perhaps it is in recognition of this difficulty that some institutions do not consider clinical practice in tenure and promotion decisions (Gerolamo & Roemer, 2011). Giving teachers more autonomy over their practice, providing seed funding and mentorship for research, and reducing clinical supervision responsibilities have been suggested as ways of making the workload more manageable (Rich & Nugent, 2010).

2.4 Partnership and Collaboration

Like in other sectors of the economy, there is a growing emphasis on collaboration and collaborative leadership in healthcare and nursing education. Increasing complexity of healthcare demands coordinated and collaborative approach to training of health professionals including nurses (Bvumbwe & Mtshali, 2018). Thus, nurse teachers must be prepared for evidence-based practice and inter-professional collaboration and communication skills (Rich & Nugent, 2010). At the nursing school level, teacher collaboration is necessary for curriculum development and review and acquisition and optimal utilization of school resources. Bryant & Ogle (2015) explain that it is important for faculty to have

shared vision and goals and allocate time and resources for enhanced teacher collaboration. Teacher collaboration promotes sharing of knowledge, improves efficiency and prevents duplication of efforts. For example, teachers can work together to develop simulation scenarios and checklists for instruction and evaluation (Bryant & Ogle, 2015). Inter institutional partnerships enable sharing of best practices (Bvumbwe & Mtshali, 2018) and ideas on how to improve curricula or develop teacher expertise (Bryant & Ogle, 2015). Interinstitutional and interprofessional collaboration can also make it possible to share scarce and expensive resources, for example faculty and laboratories, between institutions (Bar-on et al., 2013), thereby easing workload and resource constraints (Missouri nursing education resource committee, 2013). Moreover, engaging professionals from complementary fields as part of faculty can enrich nurse training curriculum and research projects and help mitigate faculty shortages (Potempa et al., 2009).

3 THEORETICAL FRAMEWORK

This study examines the requirements and support infrastructure for nursing education through the theory of practice architectures developed by Kemmis and colleagues (Kemmis, 2013). Whereas previous studies on the requirements for nursing education have tended to focus on specific aspects such as teacher preparation, adequacy of faculty, curriculum needs and training resources, the theory of practice architectures provides a comprehensive approach to examine the prerequisites for educational programs. Furthermore, the theory of practice architectures provides a lens with which we can view how these prerequisites are connected to teachers practices and the outcomes of education, and the interrelationships among the different prerequisites.

The theoretical framework is presented in four main parts. The first part defines the purpose of nursing education, the second part explains nursing education as a practice prefigured by certain practice conditions or architectures, the third part illustrates how the practice architectures are utilized in the intersubjective practice space, and the last part describes the expected conditions or architectures for the practice of nursing education.

3.1 The purpose of nursing education.

Before describing the practice conditions of nursing education and how they support or constrain nursing education, it is necessary to first define the goals of nursing education and their relationship to the practice conditions. According to Kemmis (2013), the purpose of education is to secure the good for each person and the good for humankind. He explains that what is considered as good life is context-dependent and dynamic, that is, depends on time, place, and circumstances. In his view, education develops both individuals and the society. Societies, through history, develop educational institutions for training individuals to live according to prevalent ideals and to pass on practices from

one generation to the next. As much as societies mold individuals to its expectations, individuals also mold societal practices from generation to generation. This way, education not only reproduces, but also alters social practices. Reproduction connects current practices with the past while alteration of practices or introduction of new ones is necessary for survival in a changing world. It can thus be said that the purpose of nursing education is to impart the knowledge, skills, and values of the nursing profession for the good of the nurses, the nursing profession, and communities by reproducing traditional practices while supporting innovation and transformation of practices for changing healthcare needs. Kemmis (2013) defines education as the process of:

initiation into (a) forms of understanding that foster individual and collective self-expression, (b) modes of action that foster individual and collective self-development, and (c) ways of relating to one another and the world that foster individual and collective self-determination, and that are, in these senses, oriented towards both the good for each person and the good for humankind. (p. 1)

Kemmis, Wilkinson, Edwards-Groves, Hardy, Grootenboer and Bristol (2014) as cited by Kemmis (2013 p. 16) reason that education relates to the good of society by initiating people into “practices that enact and secure (1) a culture based on reason, (2) a productive and sustainable economy and environment, and (3) a just and democratic society.” From this viewpoint:

education must be an initiation into ... (1) *forms of understanding* that support and secure a culture based on reason, (2) *modes of action* that support and secure a productive and sustainable economy and environment, and (3) *ways of relating to one another and the world* that support and secure a just and democratic society. (Kemmis, 2013 p. 16)

Likewise, nursing education aims for the good of the nursing profession and the larger society by contributing towards collective ability to understand, reason and communicate effectively, work efficiently in an economical and environmentally sustainable manner, and promote justice and democracy within the reaches of nursing practice and in the world we share. In short,

education should nurture what Kemmis and Smith (2008, p. 4), as cited by Kemmis (2013 p. 25), describe as a “morally committed action oriented and informed by intellectual traditions.”. For individuals, for example nurse students, the most important outcome of education is the development of knowledge, skills and values which they can utilize to express ideas, act, and form relationships in world around them. Table 1 below summarizes corresponding outcomes of education for individuals and society according to various authors and theorists.

Table 1

Classification of Aims of Education by Various Theorists

	Author	Theory		Skill or ability	
Individual side	Bloom (1956) and colleagues)	Bloom’s taxonomy classifies knowledge into:	Cognitive skills	Psychomotor skills	Affective skills
	Pierre Hadot (1995)	Ancient Greek philosophy aimed to teach people to:	<i>think and speak well</i>	<i>act well in the material world</i>	<i>relate well to others</i>
	Kemmis and colleagues (2013)	Individual practices	forms of understanding (<i>sayings</i>)	modes of action (<i>doings</i>)	ways of relating (<i>relatings</i>)
Social side	Kemmis and colleagues (2013)	Social aims of education	a culture based on reason	a productive and sustainable economy and environment	a just and democratic society
	Bourdieu (1990, 1998)	Fields	<i>cultural and symbolic fields</i>	the <i>economic field</i> ,	<i>social field</i>
	Jürgen Habermas (1972)	Social media	language	work	Power

Note. Adopted from Education, educational research and the good for humankind Kemmis (2013 p. 11)

Nursing as a field leans much on Blooms taxonomy and nursing skills are commonly categorized into cognitive, psychomotor and affective domains. The

essential skills in nursing include cognitive skills which include the use of knowledge, critical thinking and offering scientific rationale for actions; technical or psychomotor skills, for example manual dexterity, good eye-hand coordination; interpersonal or affective skills, needed to interact and communicate well with patients and others; and ethical-legal skills to conduct themselves ethically and in a lawful manner (Hinkle & Cheever (Eds) 2014). Based on the theory of practice architectures, this study classifies nursing skills into the corresponding domains of *sayings*, *doings*, and *relatings*.

3.2 Education as a practice prefigured by practice architectures

Kemmis and Grootenboer (2008) in their theory of practice architectures construct practices as consisting of *sayings*, *doings* and *relatings*. Kemmis (2013) explains that the forms of understanding, modes of action and ways of relating to others and the world do not occur separately but are manifested in practices. Kemmis, Wilkinson, Edwards-Groves, Hardy, Grootenboer and Bristol (2014), as cited by Kemmis (2013), define a practice as:

a form of socially established cooperative human activity in which characteristic arrangements of actions and activities (*doings*) are comprehensible in terms of arrangements of relevant ideas in characteristic discourses (*sayings*), and when the people and objects involved are distributed in characteristic arrangements of relationships (*relatings*), and when this complex of sayings, doings and relatings 'hangs together' in a distinctive *project*. (p. 2)

Taking an ontological stance, Kemmis, and colleagues, write that education as a practice does not occur in a vacuum, but is dependent on certain actual preconditions and arrangements which they term as *practice architectures*. They place practice architectures at the intersection of individual and societal aims of education. Kemmis (2013) contends that different architectures support different kinds of educational practices and outcomes and that to transform educational outcomes, the underlying practice conditions must be changed.

Kemmis and colleagues concur with Schatzki (2012) that practice architectures or arrangements 'shape' or 'prefigure', but do not determine people's practices. They liken practice architectures to a path that offers an easier way through a forest (Kemmis, 2013 p. 4), and explain that practice architectures change over time, and can be pre-existent, modified or introduced to a site. They present three types of architectures namely the *cultural-discursive architectures*, for example the preferred language or common ideas, the *material-economic architectures*, for example the organization of physical objects, and the *social-political architectures*, that is, the kinds of social relationships in a site. The practice architectures can be site specific or general, meaning they are found in more than one site. Through human interactions, practice architectures and practices can be borrowed, or shared from one practice site to another, leading to commonalities among different sites. Because the architectures affect how people understand and communicate, do things, or relate to one another and the world around them, educators should be conscious of the architectures at their practice sites and how they affect people's practices.

3.3 Practice architectures as arrangements in intersubjective space

In the framework of educational practices and architectures (see figure 1), Kemmis (2013) presents practice architectures as arrangements in intersubjective space. On one side is the individual being initiated into practices, and on the other side the social world, which is shared by the individual and society. Society, sometimes together with the learner, establishes the practice architectures or arrangements. The practice architectures are utilized when education participants interact in the intersubjective space, which is made up of the entwined *semantic, physical space-time* and *social* spaces.

Participants' *sayings* occur in the *semantic space*, through the medium of language and is prefigured by *cultural-discursive arrangements* for understanding and communicating within the practice. For example, philosophies, knowledge base, and terminologies of the nursing profession are different from other

professions. *Doings* occur in the *physical space-time* through the medium of *activity* and *work* and are dependent on *material-economic arrangements*. For example, demonstration using manikins in a skills lab, or teaching and learning activities based on a time schedule. Lastly, people's *relatings* occur in *social space* through the medium of *power* and *solidarity* and are shaped by *social-political arrangements*. For example, the norms of relationships between teachers and learners, which might be hierarchical or cooperative. There is a reciprocal relationship between architectures and practices, in that as much as architectures prefigure people's practices, they are put in place by people's practices, for example, a teacher can set up teaching equipment and leave them to be used by others.

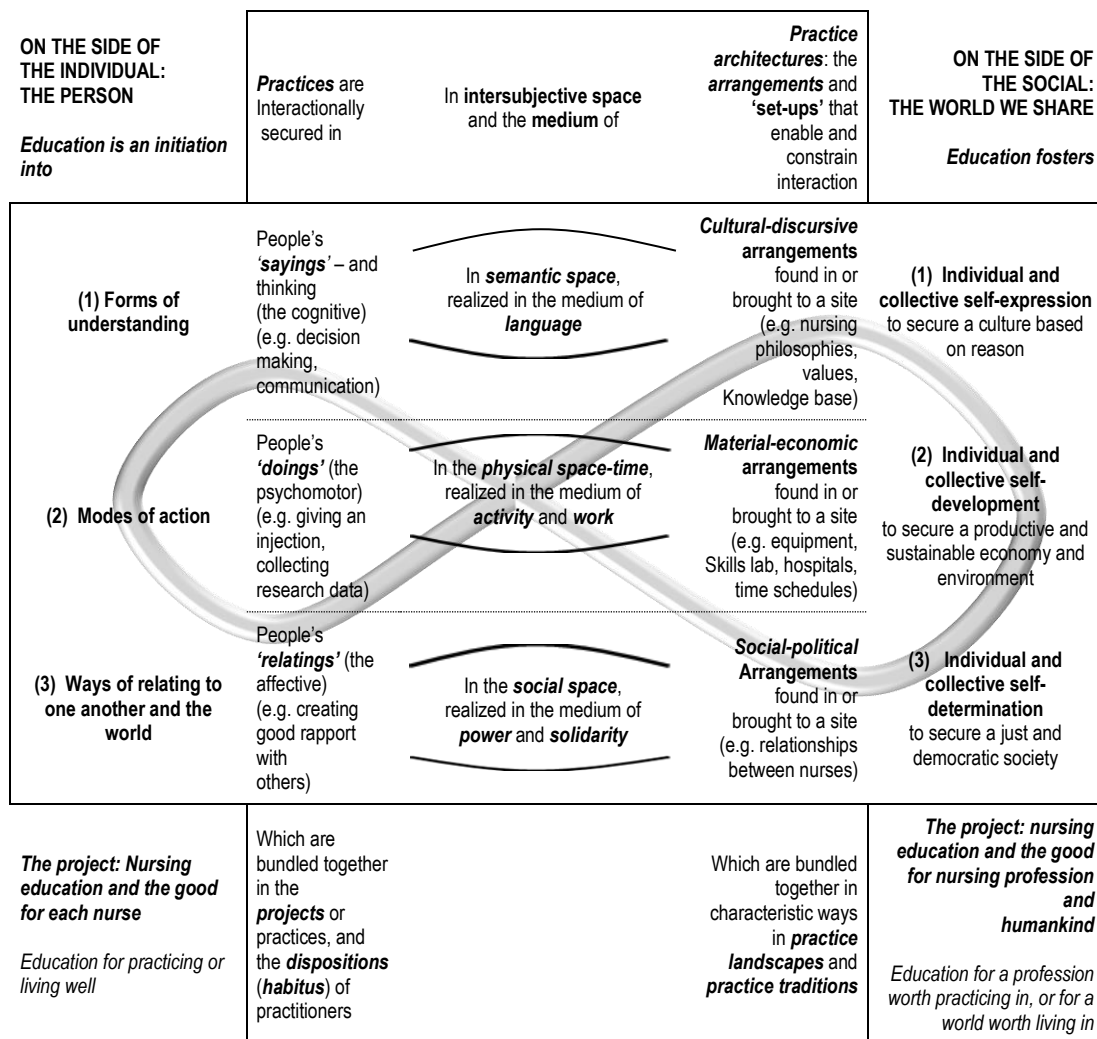


Figure 1. The theory of practice architectures and a theory of education (Modified for nursing education from Kemmis (2013 p.16))

For ease of reference, the cultural-discursive, material-economic, and social-political architectures are sometimes herein after abbreviated as CDA, MEA, and SPA respectively.

Besides influencing participants' practices (*sayings, doings and relatings*), the different kinds of architectures are interdependent, and influence the acquisition, development and utilization of each other. An example is an exploratory research by Miller & Bull (2013) on the opinions, experiences, and attitudes of nurse academics regarding simulation. The study showed that availability of simulation equipment (MEA), the faculty's knowledge on how to operate the equipment (CDA), and competition with other institutions (SPA) influenced the choice to use simulation. Figure 2 illustrates how teacher know-how (CDA), resource availability (MEA), and competition (SPA) all together determine whether teachers will use simulation as a teaching method.

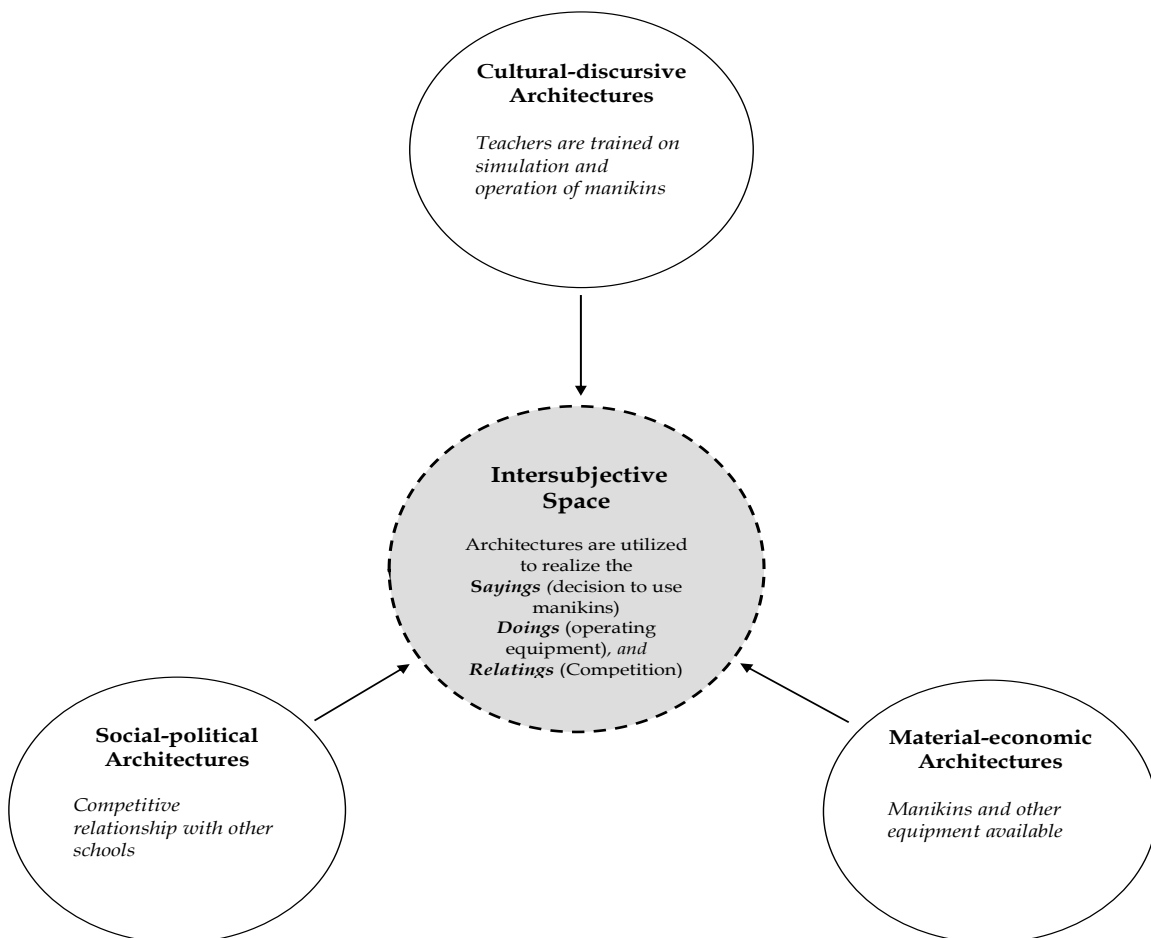


Figure 2. Different architectures support simulation

Often, there is more than one educational project or practice at educational sites, for example, Kemmis et.al. (2014) point that the 'Education Complex' which consists of the five practices of student learning, teaching, teacher learning, leading and researching often exists in school sites as what they call '*ecologies of practices*'. Educational institutions are also sites for other practices for example sports, and physical infrastructure maintenance. The significance of practice ecologies is that different practices or projects in one site become part of the site architectures and influence one another, for example, while it is expected that conducting research improves a teachers' competency and make them better teachers, the more time used by a teacher in researching, the less time is available for teaching by the same teacher.

Kemmis (2013) advises educators that the general aims of education should be used as guideposts for developing and evaluating or critiquing educational curricula and practices. After determining the aims of education, educators need to identify practices necessary for the achievement of those aims, then lay down architecture for those practices. Different educational disciplines have their characteristic architectures that shape their practices, for example philosophies and subject terminologies, material instructional set-ups, and social norms. Consequently, different kinds of educational practices produce different kinds of outcomes. For instance, "practicing education as transmission of knowledge content may develop compliance to authority; practicing education as social construction of knowledge through activity may nurture individual agency..." (Kemmis, 2013 p.7). An example in nursing education could be, after determining that information and communication technology (ICT) should be included in the nurse training curriculum, nurse educators should also consider how practices (*sayings, doings, and relatings*) involved in teaching and learning of ICT relate with real life nursing practices. For example, instead of teaching only general introduction to ICT, the training resources or architectures could be designed to include practice with prototypes of healthcare ICT systems. Rich & Nugent (2010) reason that the nursing curriculum on ICT should include use of electronic health records so that

students can actually use technology to assess patients and communicate with other care providers as opposed to being limited to theoretical learning.

3.4 Practice architectures for nursing education

For this study, based on the theory of practice architectures, the prerequisites for nursing education are categorized into material-economic, cultural-discursive, and social-political architectures. Practice architectures are required to prepare and support the faculty to carry out their complex responsibilities. Faculty responsibilities include theoretical teaching, clinical teaching, student mentorship and supervision, administration, clinical practice, research and scholarship (Gerolamo & Roemer, 2011). The teaching role involves teaching theoretical concepts and offering hands on practice to prepare students for work life (Bryant & Ogle, 2015). Other areas of nurse teacher responsibility include leadership and management.

Cultural-discursive architectures in nursing education comprise of established or recognized nursing philosophies, values, terminologies and knowledge that prefigure ways of communication and understanding (*sayings*) in the profession. These concepts may be written down as contents of nursing school curriculum or enacted by teachers in their *sayings, doings, and relatings*. The nurse training curriculum is ideally based on educational aims (Kemmis, 2013; NCK, 2014) and its scope and content is informed by the pedagogical triangle comprising educator insights, learner needs, and community needs (Kemmis, 2013). When developing the curriculum, educators should also anticipate future needs of a changing world and prepare nurses for that.

Because nurse teachers play a key role in curriculum development and implementation, they must be well versed in nursing knowledge, philosophies, and values as well as pedagogical and research methods. Teacher preparation and development is examined as a cultural-discursive architecture. Nursing faculty competencies support, limit, or constrain how they perform their responsibilities as individuals and as a team. Before qualifying for employment

as nurse educators, nurses are required to have minimum specified education and clinical nursing practice experience (Gerolamo & Roemer, 2011). The NCK requires at least two years of clinical practice for one to qualify as a nurse teacher (NCK, 2014). Additionally, as part of the requirements to maintain their practice licensure, nurse educators are expected to maintain their clinical competency and to keep up with current developments in clinical nursing through regular practice (Gerolamo & Roemer, 2011; NCK, 2014). Nurse teachers also need to undergo continuous professional development to keep up to date with emerging issues in the nursing practice and nursing education.

Material economic architectures comprise the fiscal, physical, and temporal resources for undertaking school activities. For example, funds are required for hiring faculty and support staff, buildings, furniture, and teaching equipment, and the time available for curriculum implementation influences organization of school activities.

Social-political architectures include the established norms, policies, or agreements that govern relationships within the nursing school and relationships between the school and the outside world. Relationships within school community is dependent on the formal and informal structures for management, supervision, collaboration, teamwork, student involvement, opportunities for role-modelling and social learning. It is necessary to define norms and agreements because interactions among education participants influence the outcomes of educational programs. According to Kemmis (2013), when different participants, for example teachers, students, administrators, and other staff interact with one another in the institution, they come with their own individual practices (*sayings, doings and relatings*) that influence each other's practices. For this reason, they can be viewed as part of the practice architectures. Figure 3 illustrates how the *doings, sayings and relatings* of students and teachers are interdependent.

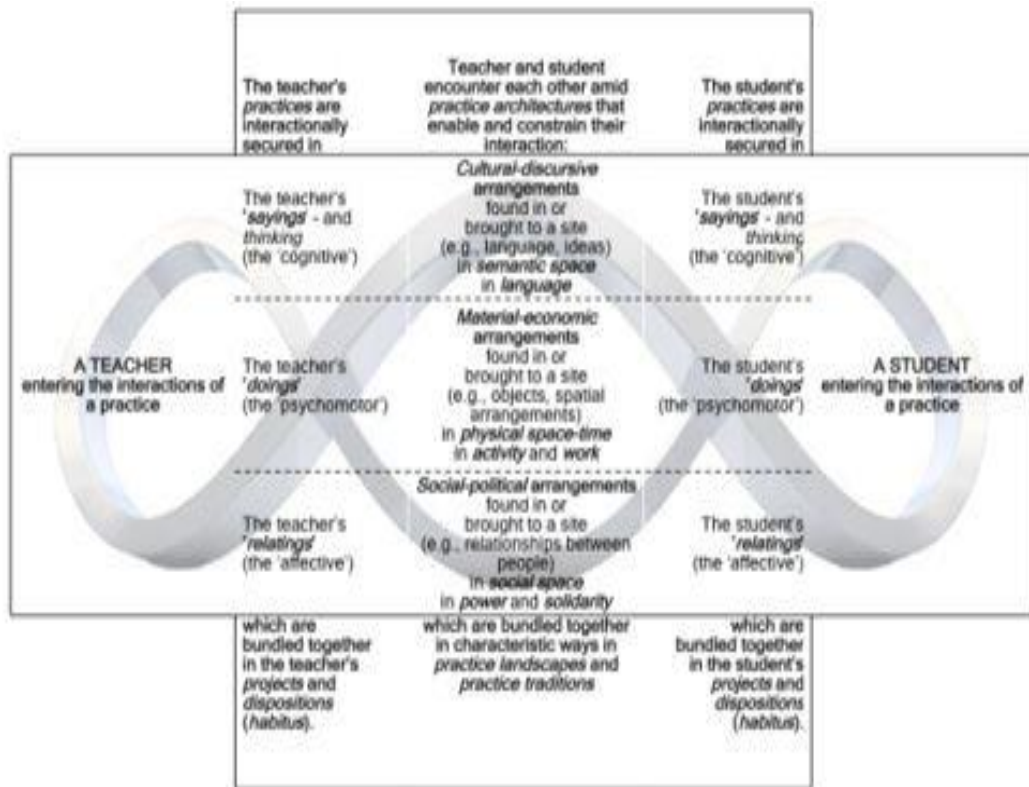


Figure 3. A teacher and a student encounter one another among practice architectures. Reproduced from Kemmis, (2013 p. 10)

4 METHODOLOGY

4.1 Data collection tools and process

Data was collected from three types of sources. The first source is the document review of NCK *Training and Accreditation Standards* (2014) checklist for nurse training institutions, the second source was nurse teachers currently teaching in the KRCHN diploma program, and lastly, expert opinion was sought from one former teacher in the KRCHN diploma program.

4.1.1 Data from NCK Training and Accreditation Standards (2014).

The NCK *Training and Accreditation Standards* (2014) checklist outlines the requirements that institutions must fulfil before approval and registration as a nurse training institution. The NCK monitors and provides supportive supervision for the fulfilment of the set standards. The administrators and nurse educators in the training institutions have the responsibility to ensure that these prerequisites are met and maintained for quality nursing education. This checklist was reviewed for information on what the NCK considers as critical and non-critical prerequisites (architectures) for KRCHN diploma nursing education.

4.1.2 Data from nurse teachers and data from expert participant.

Nurse lecturers currently teaching in the KRCHN diploma program were asked about their experiences and perceptions of their practice conditions through administration of questionnaires. The researcher opted for a questionnaire because the researcher was in Finland while the participants were in Kenya. Because the participants were mostly based in rural regions with unreliable internet connection, it was not feasible to collect data through phone interviews. Perhaps face to face or phone interviews might have provided more opportunity for follow-up questions and generated a richer data set.

The questionnaire (See Appendix A) was based on the theoretical framework of *practice architectures* (Kemmis, 2013) and focused on collecting teachers' opinions of their work conditions and experiences as teachers in the KRCHN diploma program. The questionnaire was administered to participants through an email link to SurveyMonkey. Before sending the survey link, the researcher called the participants and explained that completing the questionnaire may require about one to one and half hours, and that they could complete it on more than one sitting. Participants were encouraged to give as much information and explanation as they could and to use of examples wherever possible. They were given at least one week to complete the tool which consisted of fifty-three, mostly open-ended questions. Some questions focused on conditions in the current work institution on and others enquired about overall experience as a nurse educator. The data collection tool for nurse teacher perspectives was pretested through administration to a former colleague. There were four main types of questions in the questionnaire:

Type 1 questions. Questions about respondent demographic data, work experience, and current institution (Q1-Q6). For example, Q2. Years of experience as a nurse educator _____

Type 2 Questions. Questions asking nurse teachers to describe availability and adequacy of prerequisites for nursing education and how they affect their work.

Questions about cultural discursive architectures.

▪ Questions about initial teacher preparation and continuous professional development (Q7- Q10, Q12 -Q14, Q18). For example, Q9. In what ways did the program(s) you underwent (Bachelor's degree, higher diploma, or other) prepare you for the role of teaching?

▪ Questions about KRCHN diploma curriculum (Q19-Q20). For example, Q19. What are your views on the scope and content (number and details of subjects) of the curriculum, that is, what students are expected to learn in the program?

Questions about material-economic architectures (Q23-Q37). For example, Q37. The use of locally available teaching or learning resources is often emphasized. What are some examples of how your institution utilizes locally available resources for instruction and learning?

Questions about social-political architectures (Q11, Q38-Q44). For example, Q11. What are your thoughts about the requirement that nurse teachers have at least 2 hours of clinical practice per week?

Type 3 questions. Questions about institutional practices, teachers' instructional practices, and factors influencing practices. Responses to these questions were intended to test internal consistency on the role of cultural-discursive, material-economic, and social-political architectures in the teachers' practices.

Questions about factors influencing teachers' instructional practices (Q15-17, Q45-Q46). For example, Q15. What factors influence your choice of teaching methods? Please include all you can think of.

Questions about institutional practices for evaluating and improving instruction (Q 21-Q22). For example, Q22. What are the practices for improving instruction in your current work institution?

Type 4 Questions. Questions about overall impressions and recommendations for improving nurse training in the KRCHN diploma program

Questions about teacher's overall impressions and satisfaction with instructional outcomes (Q 47-Q48). For example, Q48. What is your general level of satisfaction with nursing students' acquisition and development of the following skills?

Questions soliciting participant's recommendations for improvement of practice conditions for nursing education. (Q49-Q53). For example, Q49. In your opinion, what are some of the ways that nurse teachers can manage the challenges faced in selection and implementation of instruction methods? Please give examples where possible.

The questionnaire for soliciting expert opinion (Appendix B) was developed as a supplement to practitioner questionnaire. The expert questionnaire was developed separately because the expert was not

representing a specific nurse training institution. The questionnaire and responses for expert opinion was transmitted via email.

4.2 Study Participants and participant selection

The study participants consisted of seven nurse lecturers and one expert.

4.2.1 Nurse teachers and nurse training institutions

As the aim of this study was to better understand the work conditions for teachers in the KRCHN diploma program, the targeted participants were full time nurse lecturers the program. This group was selected because they are currently teaching in the KRCHN diploma program and could provide information about the work conditions in specific nurse training institutions. The inclusion criterion was having been at the current work institution for at least one year. One year was considered adequate for the teachers to be well acquainted with the conditions in their institutions. One participant was recruited per institution. As the researcher did not visit the represented work institutions, the participants would describe the conditions in their schools. Convenient and snowball sampling methods were used. Due to cost reasons, the sampling began with convenient sampling (Tracy, 2013). The researcher contacted former colleagues in nursing education and requested them to participate in the study. Owing to employee attrition, only one former colleague was eligible to participate in the study. The others were either no longer working as nurse teachers or had not been in their current work institution for one year. Subsequently, snowball method (Tracy, 2013) was used whereby the colleagues and subsequent contacts helped to identify and contact other nurse educators.

A total of seven nurse lecturers for the KRCHN diploma program completed the questionnaire, five of which were male and two females. Five of the respondents had between eight to eleven years of experience as nurse lecturers, one had six years' experience as a nurse lecturer and over twenty years' experience of clinical instruction in teaching hospitals and the last one

had three and half years' experience as a nurse lecturer. The respondent with the longest stay in the current work institution had ten years and the shortest stay was one and half years. In addition to being lecturers, three respondents had additional roles in their current work place. Of the three, one was the principal of the nursing school, one the head of nursing department, and the last a clinical practice coordinator.

Each participant represented one nurse training institution from seven different counties as shown in figure 4 below. Five of the represented institutions were public and two were private. There was no representation of faith-based training institutions, the third category of nurse training institutions in Kenya.



Figure 4. Map of Kenya showing represented counties

4.2.2 Expert participant

Expert opinion was sought from one male respondent with over 15 years teaching experience in the KRCHN diploma program. He has been a principal lecturer in four different KRCHN diploma training institutions and is currently teaching in a bachelor's degree nursing program. The expert was selected because of his long experience in the KRCHN diploma program.

4.3 Ethical Considerations

Informed consent was sought from all participants. After the initial phone contact with prospective participants, the informed consent form (Appendix C) was emailed to them with instructions to sign and email back to the researcher. Once the signed informed consent was received, the link to the survey tool was emailed to the participants. The total time for completing the questionnaire was approximated to be about one to one and half hours. 1200 Kenyan shillings was reimbursed to participants to cover for internet access costs and time spent completing the questionnaire. There were no personal relationships between the researcher and study participants. One participant was a former colleague in the bachelor's in nursing program and the respondent giving expert opinion was my former supervisor while teaching in the KRCHN nursing program.

Data was collected through a password protected SurveyMonkey account and email link. Downloaded data was stored in a password protected computer and was anonymized whereby the responding nurse teachers and their corresponding institutions are referred to by alphabetical letters and numbers respectively. For instance, respondent A is a representative of institution 1.

4.4 Data Analysis

Data collected from the three sources, that is NCK *Training and Accreditation Standards* document, nurse teachers, and expert participant, were analyzed separately but are presented side by side in the findings section for comparison of NCK requirements versus the nurse teacher and expert perspectives on the actual work conditions in the nurse training institutions.

4.4.1 Analysis of data from NCK training and Accreditation Standards 2014) document

The NCK *Training and Accreditation Standards* (2014) outlines critical and non-critical requirements for accreditation of nurse training institutions. To be accredited, the institution must have 100% of the critical requirements and 75% of the non-critical requirements. These prerequisites were summarized and organized into cultural discursive, material-economic, and socio-political architectures.

4.4.2 Analysis of nurse teachers' perspectives and expert's input

Qualitative content analysis was used to analyze the data collected from nurse lecturers and the expert. A subjectivist ontological perspective was used as the researcher was interested in what participants thought about the work conditions. The data analysis process was based on the qualitative analysis steps highlighted by Zhang and Wildemuth (2009).

Step 1. Once individual responses were received, they were read through to check for completeness, relevance and internal consistencies. Follow-up questions were sent to participants concerning incomplete responses or responses requiring clarification. Responses to follow-up questions were then appended to the original responses (Example 1 in Appendix D.)

Step 2. Responses from different participants were grouped per question, or in some instances, responses to two or more similar questions were grouped together and read through several times to give the researcher a general view on the teacher descriptions and perceptions.

Step 3. Responses were read more analytically, to see patterns and identify units of analysis. The units of analysis were the descriptions and explanations of conditions and practices, expressed as either phrases, sentences, or paragraphs.

Step 4. Coding was done by highlighting text chunks representing different descriptions or ideas with different colours.

Step 5: For questions targeting specific practice architectures (Example 2 in Appendix D), a descriptive narrative was constructed from the responses. For questions eliciting responses touching on different practice architecture domains (Example 3 in appendix D), deductive approach was used to categorize responses into cultural-discursive, material-economic, and social-political domains based on the theoretical framework. In some cases, this was done with the aid of text colours, whereby red, blue, and green text was used for aspects relating to material-economic, cultural-discursive, and socio-political factors respectively. Some responses related to more than one architecture domain and these exemplify the interrelationship between the different architectures as expounded in the findings.

Step 6. Findings were organized and presented in four parts as descriptions and interpretations supported by quotations, charts and a conceptual diagram depicting the interrelationship between the three architecture domains and the *sayings*, *doings* and *relatings* of teachers' work.

The responses from the expert were distributed to the relevant sections of findings.

5 FINDINGS

This section describes the expected nursing education architectures as per the NCK *Training and Accreditation Standards 2014* checklist, the nurse teachers' description of the actual practice architectures in their work places, and how the presence or absence of the architectures support, limit or constrain the teacher's practices in nursing education. The findings are presented in five parts. The cultural-discursive architectures are presented first, followed by material-economic, and social-political architectures. For each of these, the requirements from NCK checklist are presented first, followed by nurse lecturer responses and expert opinion where applicable. The fourth part is a summary of the teachers' overall satisfaction with nurse training outcomes and impressions on how the three kinds of architectures interact in practice, and the last part is the teachers' recommendations for improvement of nursing education. The nurse teachers and are referred to by the letters A to G while the nurse training institutions are represented by numbers 1 to 7.

5.1 Cultural discursive architectures and practices

Cultural-discursive architectures comprise the established or recognized nursing philosophies, values, terminologies and knowledge that prefigure ways of communication and understanding (*sayings*) in the profession. The cultural discursive conditions of interest were nurse teacher preparation and development and the KRCHN diploma training curriculum.

5.1.1 Nurse teacher preparation and continuous professional development (CPD)

Nurse teacher preparation and development are considered a cultural-discursive architecture for nursing education from the viewpoint that nurse teachers as individuals or groups enact the nursing philosophies, values, and knowledge

in their competencies. Nurse teacher competency affects the development, implementation and evaluation of nursing education programs. The teachers were asked how their nursing education prepared them for the role of a nurse teacher, the available opportunities for their continuous professional development. The teachers also reported how their knowledge and education influence their ability to perform certain activities education. The participants' opinions on the NCK requirements for teacher development and are also presented here.

The NCK requires that nurse teachers for the KRCHN diploma program have a minimum of higher diploma in nursing or medical education, or a bachelor's degree in nursing. The nurse training institutions are required to have a staff recruitment policy that outlines staff responsibilities and faculty specialization in nursing disciplines and to show evidence of faculty clinical practice of at least two hours per week. Additionally, they must have a continuous professional development program for their faculty on both instructional methods and nursing subjects. The NCK further recommends a documented research policy with research priorities, guidelines, facilities and educational programs and that staff should be provided with opportunities and incentives to undertake research including adjustment of their teaching assignments in relation to research undertaken (NCK, 2014).

Of the seven nurse lecturer participants, four (A, B, C, and F) had completed a Bachelor of Science in nursing and a master's degree in nursing. One (E) had a Bachelor of science in nursing and two (G and D) had higher diploma in nursing. When asked in what ways their nursing education prepared them for the role of nurse educator, the participants listed some of the theoretical courses and practical experiences taken during their training as having prepared them for the role (see table 2).

Table 2.

Courses and Experiences in Nursing Education that Prepared Nurse Lecturers for the Teaching Role

Course	Mentioned by participant(s)
Theoretical courses	
Education psychology	C
Theories of learning	D
Curriculum development, evaluation and review	C, D, F
Teaching/instruction/learning methodology	B,C,D,F,G,
Education communication technology	C
Student guidance and support	D
Evaluation of student learning, student assessment & exams	D, G
Nursing subjects	A, E
Practical experiences	
Microteaching prepared students for teaching practice.	C
Teaching practice offered an opportunity to apply theory to practice as well as familiarize with the role as a nurse trainer	C, F
Clinical instruction and evaluation	E

Participant A wrote that his preparation enhanced his confidence in the teaching role, and participant C wrote:

“... Education psychology, education communication technology and Curriculum and instruction. provided a theoretical basis for teaching. - micro teaching was a requirement for students before proceeding for teaching practice. This was very useful preparation for teaching practice - Teaching practice for 1 month in an institution offering diploma in nursing offered an opportunity to apply theory to practice as well as familiarize with the role as a nurse trainer”

When asked about components not included in their educational programs that might have helped to better prepare them for the teaching role, participant

D wished they had more preparation in leadership and management. Other wishes were that more emphasis could have been put in clinical teaching (C and D), demonstration skills (C), and simulation teaching (D and E).

“At the time of training, skills lab and clinical instruction was not as emphasized as is expected. This is because the current training has evolved to include more of the skills lab and clinical instruction.”. – Participant D

The feedback indicates that the courses incorporated in the teachers' training were beneficial in developing teacher competencies as an architecture for nursing education. The teachers also identify possible areas for improvement, like the need for nurse teacher preparation programs to anticipate evolving practices nursing education.

On subject specialization in their current work institutions, two respondents (B and C) reported that they specialize in teaching specific nursing subjects, with participant C explaining that specialization in their school is based on staff training and preference. Participant F stated that she teaches mainly community health nursing but did not clarify whether she also teaches other subjects. Respondent E teaches midwifery but also teaches other subjects due to staff shortage. Three respondents (A, D, and G) reported that lecturers in their institutions do not specialize in teaching specific subjects and can be called upon to teach across specialty areas because of staff shortage and workload. This is an example of how architectures influence the utilization of each other. It was noted that even though the NCK policy (SPA) requires teacher specialization in subject areas to develop teacher expertise (CDA), staff shortage and workload (MEA) hinders subject specialization in some schools.

There was a consensus that the NCK requirement that nurse teachers have at least two hours of clinical practice per week is a good idea and is important for nurse educators to improve their skills (E) and keep in touch with the reality in the clinical areas (C). Moreover, the teachers felt that medical practice, being evolutionary, changes constantly, and it is important for nurse lecturers to have timely updates on current clinical practices (C, E, F, and G) that the students need to be taught about, for example, HIV & AIDs management guidelines

which are frequently updated (F). Even though all concurred that it was important to have clinical practice, respondent E thought two hours a week are not enough, and participant A explained that it was not practical because “lecturers only go to the practical areas when there are assessments.” Respondent G stated that “clinical area staff are never comfortable [with lecturers in the clinical area] since they improvise a lot and take shortcuts [while performing nursing procedures] due to perennial shortages.” The expert thought that although some institutions have developed clinical rotation hours for their lecturers per week, the practice is not consistent because of staff shortages. These are illustrations of how inadequate time and staff (MEAs) hinder the teachers’ *doings* (clinical practice) and how resource shortages in the clinical area affects the clinical staff *doings* when they must perform less than ideal procedures, leading to uncomfortable *relatings* with the nursing faculty. It also exemplifies how architectures influence the development and utilization of each other. The NCK policy (SPA) requires the setting up of time (MEA) to enable teachers’ clinical practice to improve their nursing competencies (CDA).

Concerning opportunities for professional development while working as nurse lecturers, five respondents reported that they have opportunities for continuous professional development in nursing subjects in their current institutions. The nature of opportunities was varied, for example, institution 2 offers a short course in infection prevention and institution 3 offers yearly scholarships for all interested staff to undergo higher diploma in nursing courses at the institution. Institution 5 collaborates with international doctors and nurses who mentor their staff and students. Participant D reported that they have opportunities in research studies, leadership and management. Participant F explained that sometimes trainings are organized by their employer, but they mostly get opportunities from non-governmental organizations (NGOs) and the ministry of health, especially when updates in healthcare are being disseminated. The nursing subject trainings attended by participants in the past two years included Clinical ethics (C), Cancer management (E), Obstetrical and neonatal care (A), Management of childhood

illnesses (D), Family planning (F) and Fire safety (C). Two respondents (A and G) reported there being no opportunities in their current work institutions, with participant G explaining that one must make individual effort with collaborative institutions. It was noted that these two respondents had not attended any clinical nursing subject training within the past two years, and this underscores the importance of having a continuous professional development plan (CDA) for teachers.

The teaching related courses attended by participants within the past two years were Teaching and learning methodology (A, B, D, and F), Curriculum development (B), Skills lab & simulated patients training (F and G), Clinical instruction and evaluation (E and F) and Academic writing (C). Other trainings attended were Leadership (C) and Management (G).

The expert opined that even though CPD is a requirement by the NCK, it is more of a formality based on number of workshops attended before renewal of practice license. He attributed inadequate opportunities for CPD to lack of funding for teacher professional development and low remuneration of teachers, which makes them work part time in other institutions thus leaving no time for CPD. The expert also reported that there are some NGOs that offer mentorship courses for clinical instructors but currently there are no mentorship programs for novice lecturers, and this makes them struggle at the beginning of their teaching career.

Table 3 is a summary of available opportunities for CPD in pedagogy, and how individual respondents keep abreast with emerging pedagogical practices.

Table 3

Available Opportunities for CPD in Pedagogy and how Respondents Keep Abreast with Emerging Pedagogical Practices

Respondent	Opportunities for CPD in pedagogical methods provided by the nursing school	How respondent keeps abreast with emerging pedagogical methods
A	-None	-Since there are no CPDs, it is not easy to keep abreast
B	-Institution offers materials e.g. Computers, LCD, skills lab	-CPD is available in the institution. (Nature of CPD not elaborated)
C	-Monthly CPD based on nurse teachers' needs and changes in nursing practices - Peer review of teaching sessions among the lecturers.	-Learning from peers - Reading on various methods and how to effectively use them.
D	-Financing lecturers for advanced studies	-Through continuous professional development (Nature of CPD not elaborated)
E	- (Our organization) has own hospital where CPD can be organized -The school has high fidelity manikins but lacks specially trained personnel -The school's clinical sites are public hospitals where trainings are regularly organized, and the schools can benefit	-I update myself on media (internet)
F	-Institution organizes yearly training on teaching or instruction skills on need basis and lecturers who have not trained are invited.	-Through CPDs -from peers -researching in the internet
G	- "There are literally no opportunities, there is general assumption that the lecturers are always in touch with books. The college's short courses are planned centrally in the main college in Nairobi but due to inadequate funding there is none."	- "There is virtually no system in place. We however do collaborate closely with the teaching hospitals where partners share new approaches but is very rare indeed."

Teacher continuous professional development is key in maintaining and updating their competency. Even though the NCK policy on teacher continuous professional development (SPA) is explicitly stated as critical, findings indicate that while some schools have set in place the material economic and social - political (collaboration with peers and partner institutions) architectures to support teacher development, other schools have no systems in place, and teachers are left to rely on their own individual agency to secure opportunities. The importance of setting up architectures is highlighted by the fact that the teachers from the schools with no material economic and social-political architectures for teacher development had not attended any nursing subject training in the past two years.

When asked about factors influencing their choice of teaching methods, the teachers listed teacher knowledge of teaching methods (A), nature and complexity of topic or expected learner competencies to be developed (B, C, D, E, and F) and learner characteristics (B, C, F, and G) for example, the students' age and year of training. The reported best practices in preparing for and implementing instruction were teacher mastery of the unit to be taught G, regular review and updating of lecture notes (G), updating oneself on current evidence-based practices, for instance, recommendations by ministry of health or WHO, and using practical cases from the hospital (C).

The factors reported as affecting ability to utilize chosen method of instruction were teacher know-how (B, C, D, E, and F), teacher experience (C, D, and E), and adequate lesson preparation (F).

“the teaching experience [I] have gathered so far gives an advantage in that I have learned to adjust to a method that is best for the teacher & student.”

- Participant C

Here teacher knowledge as a cultural-discursive architecture is seen to affect teachers' instruction practices. Teacher experience enhances teacher knowledge and is also used to affirm teacher's ability to utilize the chosen

method, that is teachers look at their previous success as an indicator that they can use the chosen methods effectively.

“Yes, I have demonstrated the ability to facilitate learning and achieved the learning objectives in various competencies” – Participant D

When asked about practices for improving instruction in their practice institutions, the lecturers listed professional development courses for lecturers (B, C, and F), and changing teaching approaches (D and E). This corroborates the theory that in order to improve practices, we must improve the architectures.

Summary

The findings show that teacher training and development as a cultural discursive architecture influence teachers' *sayings* and *doings*, for instance, their choice and ability to utilize various instructional methods. Teacher competencies are developed through courses which prepare nurses for the roles of nurse educator and enhanced by experience and continuous professional development. The teacher's felt the theoretical education-related courses taken during their initial training provided a good basis for the teaching role and practical experiences like teaching practice helped them familiarize with the role. Some areas for improvement include more training on practical teaching skills, for instance demonstration and simulation and preparation of teachers in anticipation of future needs, as well as establishing robust CPD for in service teachers to update their skills accordingly.

While the nursing NCK policies (SPA) for teacher CPD are applicable to all institutions and are deemed relevant, the material economic and social political architectures in different nursing schools affect the implementation of the policies. The differences in practices for teacher CPD despite the common NCK standards highlight the fact that the architectures prefigure, but do not determine people's practices. The findings also illustrate how architectures from different domains influence the development and utilization of each other in practice settings. For instance, inadequate material-economic architectures hinder implementation of teacher development plans (CDA). On the reverse,

we also see how cultural-discursive architectures affect utilization of material-economic architectures whereby even though institution 5 has own hospital and high-fidelity manikins (MEA) that can be used to organize teacher CPD, there are no personnel trained on their operation (CDA) and consequently, participant E updates himself on the internet.

5.1.2 KRCHN diploma curriculum

The training curriculum as a cultural-discursive architecture for nursing education specifies the nursing philosophies, values, knowledge, and skills that nurse students are to be trained in, as well as the nature of the candidates that may be enrolled into the program. Besides content, the curriculum also specifies the modalities of training and evaluation. In order to train nurses who are morally committed, action oriented and informed by intellectual traditions, it is imperative that the curriculum objectives, content and delivery is deliberately designed to mold such kind of nurses. Since nurses are primarily trained to serve communities, the curriculum should revolve around current and anticipated community needs.

As per the NCK checklist, the vision, mission, and objectives of the nurse training curriculum should be linked to national health priorities, policy and plans for it to be approved. The institution must also have a documented policy on curriculum and program development and review and student selection, admission and evaluation. The NCK prescribes curriculum revision within 5 years (NCK, 2014).

All except participant G feel the curriculum objectives are locally and regionally relevant. Moreover, three of them (B, E, and F) indicated that the objectives are also internationally relevant. This was supported by the fact that graduates have been able to secure jobs both locally and internationally (C). Participant G felt the objectives are "... fairly relevant, however there is no clear emphasis on dealing with regional or geographical specific health burdens.". Contrary to this, Participant A wrote that "Most conditions [covered in the curriculum] are what the learners go and meet when they qualify, [e.g.] malaria,

typhoid, helminthiasis etc". On curriculum scope and content, four participants (B, C, D, and E) felt the scope and content of the curriculum was good, and used descriptions like "adequate", "comprehensive", "good", and "designed to produce competent graduates". Participant A thought the scope was ok, but the subjects were too many for the given years of training. According to participant G, "The scope is very broad but not in tune with new and re-emerging diseases and entrepreneurial skills applicable to management." Participant F wrote, "As I am training diploma nurses, there are units one teaches and feels the scope is too wide compared to the students' level of training especially in some general nursing units." In the expert's view:

"The scope [seems] to be huge suggesting high demand on the performance of the graduate but once the nurse qualifies the scope of practice is so narrowed to just a care giver who depends fully on doctors decision on patient care orders even when their training has prepared them to practice a degree of independence."

Regarding curriculum organization, respondent E thought the theory training is not well distributed throughout the program and that skills lab training has inadequate time allocation. Participant G thought the theoretical content of the curriculum is too much for the allocated time. He wrote, "...The curriculum content in theoretical session is more than the time allocated this causes [a lot] of strain on both teaching staff and students". The expert felt the disadvantage of the block system is that students take long periods in clinical placement hence the theory-practice gap is enlarged.

Several approaches for evaluation of student learning were reported, including internal continuous tests and examinations at the end of teaching blocks or academic year, practical assessments in school and in clinical placement areas, assessment of students by preceptors in clinical area, students' case study evaluation, and external examination. Practices for evaluating teaching include confidential evaluation of classroom teaching by students through questionnaires, evaluation of clinical placement experience by students, and peer evaluation of teaching sessions among colleagues.

Summary

The curriculum objectives provide a starting point for the development of the curriculum as a training architecture. The content, scope and activities are developed in line with the objectives, and organization of curriculum delivery timeline is key to its implementation. There were divergent opinions on the relevance of curriculum objectives and content. While some respondents felt the curriculum is designed to prepare competent nurses, others felt the curriculum did not cover current issues, for instance emerging healthcare needs, entrepreneurial and leadership skills. There appears to be a mismatch between the curriculum content and scope (CDA), material economic resources (MEA) for its implementation and nurses' scope of practice post qualification. For example, some respondents believed the curriculum scope is too broad given the duration and level of training. The expert also thought the block system of curriculum organization creates gaps between theory and practice as a result of long periods between theory courses and practical placements. The divergent opinions on curriculum relevance and inconsistency between curriculum content and scope (CDA) with the actual outcomes of training (program graduates' *sayings, doings, and relatings*) suggest a need to review the relevance and structure of the training curriculum as an architecture for the envisioned outcomes of nursing education.

5.2 Material-economic architectures and how they influence practices

Material-economic architectures include fiscal, physical, human, and time resources. This part describes the NCK requirements for, and the teachers reports on the availability of material economic and temporal architectures and how these affect instruction and learning.

The NCK requires institutions to have adequate learning spaces and resources, complete with inventories and maintenance schedules. The NCK provides comprehensive checklists for offices, lecture rooms, library, computer

lab, and skills lab. The school premises should conform to safety standards, have adequate water and power supply, and be conducive for learning, for instance, they should be situated away from noise and other forms of pollution. The institution is also required to show evidence for the means of transport for students. On human resource, the schools need to meet the lecturer-to-student ratio of 1:10 and have qualified support personnel in proportion to student population. Some support personnel required are librarian, ICT technician and administrative assistant. All nurse training institutions must show evidence of a secure access to a teaching hospital for students' clinical experiences. The NCK provides a comprehensive list of standards to be met for a hospital to qualify as a teaching hospital and the teaching hospitals must be assessed and approved by the NCK. Non-critical requirements the institution is expected to have include ICT infrastructure with internet connectivity, research facilities, and student spaces such as common room and recreational facilities (NCK, 2014).

The teachers report on the material-economic and temporal conditions in their work institutions and how these affect their work are presented below.

5.2.1 Classrooms and furniture

Only institutions 2 and 3 were reported to have adequate classrooms and furniture. Institutions 1 and 5 were reported to have inadequate classrooms and furniture, making it difficult to have multiple teaching sessions concurrently. Participant A, in describing inadequacy of classrooms in school 1 wrote, "Students have to wait for other classes to end so that they get classrooms". Participant G reported that classroom spaces are few and they improvise occasionally. She did not however clarify the nature of improvisation. Participant E explained that their students lack group study spaces and must study from their beds during clinical placements. It is important to note that some teaching hospitals and health facilities are located several kilometers from the nursing schools and the general practice is that students reside near the hospitals for the duration of their clinical placements. Some institutions provide student accommodation,

usually at a fee, while in some cases students must make own accommodation arrangements. The expert reported that most schools he has worked in have inadequate school infrastructure. He stated, "There is always no enough space and furniture for students in most of the institutions I have worked."

Classrooms in school 2 were reported to be free from noise while those of school 3 were reported to be located near a noisy road, which affects instruction. It was noted that classrooms in institutions 3, 5, and 7 are weather prone, with factors like hot weather or rain interfering with instruction and learning. For instance, participant G informed, "The windowpanes are broken and is quite a problem during rainy season ..." - Participant G

5.2.2 Teaching equipment and materials

All the nurse teachers reported that availability of teaching equipment and materials affect their choice of teaching methods. Teaching resources also affect the effectiveness of teaching (A, B, C, and E) and quality of learning (A and B), for instance, availability of equipment and materials affect the teachers' ability to vary instructional methods to enhance instruction (A and B) and make teaching sessions interesting to learners (A).

"We have few projectors hence it makes it difficult to illustrate pictures and videos when we have more than one class in session ... Charts and boards are sufficient and makes it easy to note key points and illustrate simple diagrams" -Participant E

Only institution 2 was reported to have all the required teaching aids. Information on the availability and adequacy of equipment and materials in institution 3 was missing. Participant G, reporting about institution 7 wrote, "Almost all computers are obsolete, there is no functional projectors. Most charts are old and torn due to overuse. We use white boards but the pens are very inadequate." In the expert's opinion, many institutions do not have adequate teaching resources, which constrains teaching and learning, for instance, lack of projectors leads to more time spent delivering lesson content as teachers must write on the board or dictate notes.

The teachers cope with teaching resource inadequacies by planning to utilize what is available and being creative.

“Yes, I am [able to utilize the chosen method of instruction] because I chose the method and had considered availability of the resources during preparation of the lesson. However sometimes unforeseen circumstances may occur like power blackout and this requires one to be creative to ensure the content is covered all the same.” Participant F

5.2.3 Skills lab and skills lab equipment and materials

Skills lab is important for demonstration of nursing procedures (B, C, and E) and provides an opportunity for students to practice before they meet real patients (A and B). While all institutions appear to have a skills lab, only those in institutions 5 and 6 were reported to be well equipped. For institution 7, most skills lab equipment was reported to be either broken down or vandalized because there is no one responsible for the lab, which is shared by different faculties, creating competition for use. Lack of skills lab equipment was reported to affect teaching and learning of nursing skills (B, C and E).

According to the expert, most institutions do not have required skills lab equipment because they are expensive. He explains that some institutions borrow the equipment from other institutions to satisfy NCK requirements during approval assessments, only to return them afterwards and continue training without a properly equipped skills lab.

5.2.4 Textbooks and reference materials for teachers and students

Textbooks and reference materials keep teachers updated on current information (A and C) and help in preparation for teaching (B and C). Four institutions (B, C, F and G) were reported to have adequate textbooks and reference materials for the teachers with institutions 2, 3, and 7 having both print and electronic resources. The others were reported to have inadequate textbooks and reference materials for teachers.

For students, textbooks and reference materials support independent study (A, B, C, and E). Inadequacy of textbooks make students over reliant on handouts from the teachers (A) and affects their ability to do assignments (E). Institutions 2, 3, 6, and 7 were reported to have adequate books and reference materials for students with 2 and 6 having electronic resources also available to students. The rest have insufficient books and reference materials for students. The expert reported that most schools he worked in had well equipped libraries but reference materials for teachers were not always adequate due to the cost of acquisition.

“...Not adequate. Sometimes students go in turns meaning that others may [lose] hope and [it] becomes [a] missed opportunity...They will rely only on the lectures handouts which is just a small portion of what they should know” – Participant A

5.2.5 Computers for teachers and students

Computers are used by lecturers to access electronic resources (A and B), to prepare teaching materials (B, C and F), during teaching sessions (E), and to store notes (B). Five institutions were reported to have functional computers for teachers. Institution 2 has laptops for each teacher and teachers can also access desktop computers in the library. Institution 3 has desktop computers for each teacher and a few laptops for teaching sessions, which limits teachers' ability to project media. Teachers in institution 6 have access to desktop computers and for institution 4, it was simply stated that teachers have enough computers. Institution 5 has only a few laptops which the teachers supplement with their personal laptops. Representatives from institutions 1 and 7 reported that the lecturers use their own laptops as there were no computers for lecturers.

“All the computers for lecturers are obsolete. One has to make individual effort to acquire one for personal use.” – Participant G

Computers for students are used for teaching ICT skills to students (F), and by students to do personal academic work (A, B, C, E, and F). All except

institution 1 have computers for students. Representatives of institutions 3, 4 and 7 reported that the available computers were insufficient.

5.2.6 Internet connectivity

There is internet connectivity in five institutions. Institutions 4 and 6 lack internet connectivity. In institution 7, the internet connectivity was reported to be occasionally disconnected due to nonpayment of bills or power outage while in institution 1 the Wi-Fi was reported as rarely operational. While internet connectivity is useful for accessing of online resources (A, B, C, and E) participant C noted that availability of internet connectivity in the work place contributes to time wasting on social media.

“Internet is available for lecturers as well as students. Very important when searching information for teaching. However it also contributes to time wasting at workplace when used for non-academic issue[s] (whatsapp, Facebook, Instagram) among others” - Participant C

5.2.7 Transportation to practical placement areas for teachers

It is important for teachers to regularly visit students in the clinical areas for purposes of supervision and mentorship. Given that some clinical placement areas are far from the training institution, teachers require transport to reach the facilities. For institutions, 2, 3 and 6, transportation is available when required. For institution 4, it was simply stated that transportation is outsourced. In institutions 1, and 5, teachers are not able to visit clinical placement areas regularly due to inadequate resources. Lastly, teachers in institution 7 make own private arrangements to reach clinical placement areas. Though not clarified, it was assumed that they are reimbursed the transportation costs.

“the school has no van to transport teachers to clinical areas. the school occasionally funds teachers to the clinical sites, not regularly” - Participant E

The expert explained that most institutions he has worked in have college buses which transport teachers only when they accompany students, otherwise

teachers are reimbursed the cost of public transportation which is not always safe or reliable.

5.2.8 Faculty

The NCK recommends a teacher student ratio of 1:10 but only Institution 3 was reported to have met this threshold. The lowest reported teacher to student ratio was 1:50, reported for institution 7. Institutions B and D reported ratios of 1:25 and 1:15 respectively. Some reasons for not meeting the threshold were cost of teacher employment (B) and teacher transfers and retirements (G). Institution 6 relies on part time lecturers to assist with the work load. Participant A referred to the situation in their institution as a “big problem”. The reported consequences of insufficient teacher to student ratio were teachers not being able to teach students in smaller groups (G), difficulties in student supervision and assessment(A), student needs not being addressed in time (E) and low quality of learner outcomes (C). The heavy workload also makes it difficult for teachers to attend other responsibilities (F).

“There was also a time when I was forced to miss lessons so as to attend to management issues and in so doing opt for other learning methods to achieve the objectives like group work or personal assignment.” - Participant F

The expert observed that there is acute teaching staff shortage in the public nursing schools, with some constituent colleges having only one lecturer who doubles as the head of department. Consequently, faculty is overworked, and this affects instruction, for instance, marking of students’ scripts take too long. He explained that teaching in these colleges is usually complemented by external lecturers who are not wholly accountable to the institutions, hence quality of training is severely compromised.

5.2.9 Support personnel

Support staff are necessary for smooth school operations and assist both teachers and learners as participant C wrote:

“ICT personnel are available to address any technology challenges on computers, internet & LCD projector ... librarians are available in the library to issues textbooks and assist in searching for electronic resources Office assistant are resourceful in typing exams, curriculum, filing student records, clinical allocation and communication to students as well as staff in the clinical area.”

Institutions 3, 6, and 7 were reported to have the required personnel.

Institutions 1, 4 and 5 have inadequate support staff. For institution 5, the ICT technician doubles as a librarian so the library is occasionally closed when he is performing other duties. Institution 4 was reported to have no ICT technician while the available support staff have no requisite skills. There was no comment on support staff availability in institution 2. According to the expert, some institutions have support staff like ICT technician and librarians who work during the day, thus are not available to assist students in the evening when they are free to do personal study. He also observed that although skills lab managers are a requirement, there is no formal training of skills lab managers in Kenya.

5.2.10 Clinical placement health facilities

Clinical placement areas are a resource for students to experience real patients and situations, and to interact with the community. On the positive side, the health facilities were reported to support student learning because they have enough patients (A and F) with varied health conditions (C) and because their staff offer support and guidance and monitor student progress (B and F). Participant A stated that their health facility has modern equipment, and participant B reported that their health facility is purposely designed as a teaching hospital. Some reported challenges concerning the health facilities were that some are congested with students from several medical training institutions (B and E), some have nursing staff shortages (A, C, D, and E) making students part of the workforce instead of learners (C), some nursing staff are not trained on

student mentorship (C and E) and some hospitals lack ideal equipment (D).

Nurses' strike in public hospitals was also reported to affect learning.

"Our facility is purposely designed as a teaching hospital though it is now congested with students." - Participant B

"We have had a very prolonged Nurses strike for over five months paralyzing all public health facilities. There has been no student clinical placement for the entire period." - Participant G

According to the expert, the clinical placement areas have high student to patient ratios because the number of training colleges for nurses increase every year, but placement areas remain the same. He also reported that lack of staff to supervise students in placement is also a huge hindrance to effective clinical supervision.

5.2.11 Other resources

When asked to mention any other resources that support teaching and learning, two respondents mentioned facilities for extracurricular activities. School 2 was reported to have a students' management system which assists in monitoring the available extracurricular facilities and institution 4 was reported to have limited extracurricular facilities.

5.2.12 Utilization of locally available teaching or learning resources

Concerning whether and how their institutions utilize locally available resources, the participants mentioned using resources already available in the school, for instance, encouraging lectures to use available resources within the school and repairing them in case of faults (A), using students as learning resource, for example, students act as patients during demonstration of non-invasive nursing procedures (C and F). Students also contribute to the development of teaching resources, for example, by drawing diagrams or charts on manila paper to be pinned on the classroom wall as learning resources (F). The nursing schools utilize resources from local institutions (D), health facilities (B, E, and G) and public library (E) for instance, the schools get charts and guidelines from

government offices (C) and specialized doctors and nurses from the hospitals are invited to teach students (B and E). The surrounding community is used as a learning resource for community health teaching and practice (E) and local commodities such as foodstuff are also used for teaching (G).

5.2.13 Time schedules for school activities

While schedules and time allocation were generally described as satisfactory, there were some concerns raised. Two respondents (A and E) felt the time for teaching is inadequate and not well distributed. Participant A thought time was not well distributed among different subjects. Two teachers (A and C) felt there was inadequate time for student supervision due to staff shortage, and two (C and F) stated that meetings and other managerial duties take time and interfere with other assignments. Participant G mentioned that the prolonged nurses strike had put their school schedule in disarray.

“Am satisfied with the master rotation plan since it covers the activities for the entire training period Time allocated for training is adequate Meetings take a lot time interfering with time for other assignments Student supervision in the clinical area is not adequate since there are no clinical instructors. ... you do not have adequate time for classroom teaching and clinical supervision” - Participant C

Summary

There are disparities in the reported material economic architecture availability and adequacy in the represented nursing schools as shown in table 4. Material economic resource unavailability was exemplified in lack of equipment and materials such as advanced manikins, projectors, and flipcharts. Resource inadequacy was highlighted by reports of heavy teacher workload, imbalance between student population and resources and resource unreliability exemplified by frequent power outages and unreliable internet connection.

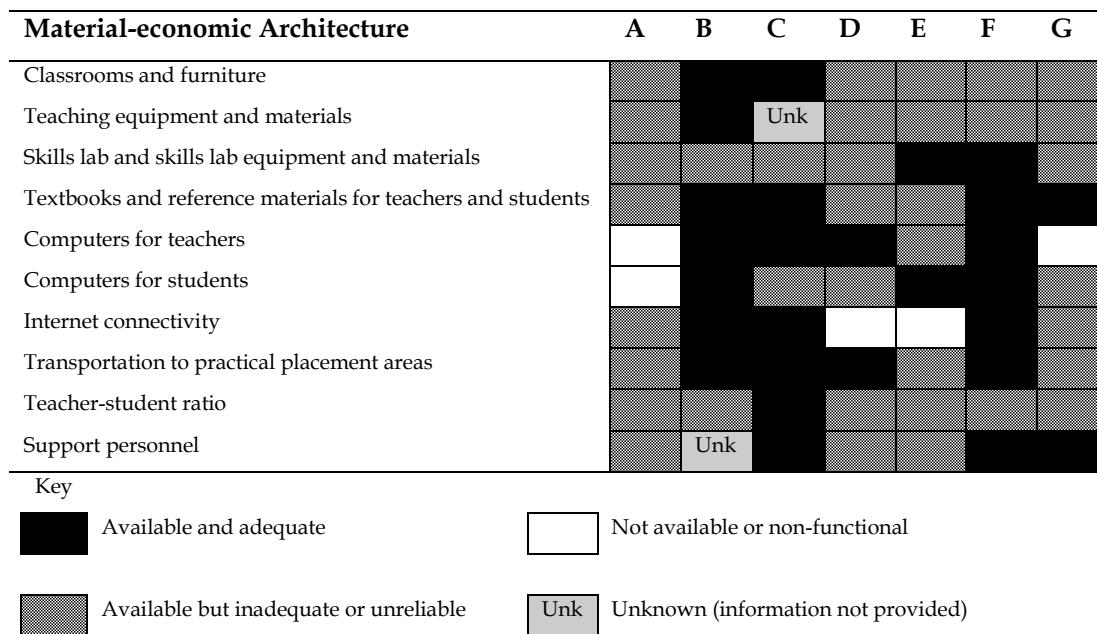


Figure 5. Material economic architecture availability and adequacy.

The cost of acquisition, growing student population, and lack of proper maintenance are some reasons given for resource inadequacies. Other reasons were teacher transfers and retirements, leading to faculty shortage. According to the expert, training institutions strive to meet minimum resource requirements for purposes of initial NCK approval but find it expensive to acquire more resources as the student population grows with successive student intakes.

The material-economic architectures enable teachers to update their skills, and carry out their diverse responsibilities, for instance, books, computers, internet, funding and time for teacher training professional support teacher CPD. The material-economic architectures also support student learning for example conducive classrooms and comfortable furniture, textbooks encourage independent student learning.

Without requisite material-economic architectures, the teachers' instructional practices are limited, and quality of students learning is affected. For instance, inadequate skills lab equipment makes it difficult to demonstrate nursing procedures (*doings*), and large student to teacher ratio makes it impossible to have small group sessions, which are ideal for demonstration.

Sub optimal quality of physical infrastructure also affects teaching when environmental factors like rain, heat, and road traffic noise interferes with instruction. High faculty workload and inadequate transportation make it difficult for teachers to visit the clinical placement areas regularly and this affects teacher-student *relationships* and lead to disconnect between theory and practice whereby the lecturers teach theory in school and clinical nurses teach practice in the clinical areas. Resource inadequacy also affects utilization of time as an architecture, for example, it was reported that writing instead of projecting lesson content consumes more time.

Time as a material economic architecture affects implementation of school activities and student learning if some subjects have insufficient time allocation. The daily timetable also affects learning when some lessons are scheduled in the afternoon, when student's concentration is often reduced. Lastly, it was noted that sometimes factors out of the school's control, like nurses' strike can adversely interfere with the school time schedule.

The teachers cope with resource inadequacy and unreliability by being creative and adaptable, for instance, using locally available resources, and sometimes, even using their personal resources to ensure that teaching goes on all the same. Solutions for faculty shortage include engaging doctors and nurses from partner institution to teach and hiring part-time lecturers to mitigate faculty shortage, but this solution has its own setbacks because part time lecturers are not fully accountable to the school.

5.3 **Social political architectures and how they influence practices**

Social- political architectures include set standards, policies, norms or agreements that guide the behaviors and relationships among different participants in education. The researcher was interested in the arrangements governing the relationships between the nursing school management, teachers, and students, and relationships between the school and other stakeholders, and how these relationships influence teachers work.

In addition to the policies concerning teacher development, curriculum, and material economic architectures, the NCK requires that nurse training institutions must show evidence of partnerships and collaboration with relevant institutions, for instance, academic exchange programs and minutes of joint consultative meetings between the training institution and clinical training sites. They should also show evidence of partnerships with communities in which they are situated, for instance, evidence of community service and social responsibility. The faculty must demonstrate capacity to provide student counseling services and there should be a documented policy on student welfare and representation. There should also be mechanisms and tools for student and stakeholder participation in the design, management and evaluation of the curriculum (NCK, 2014).

5.3.1 Internal relationships between school management, teachers and students

All respondents felt their current school management was supportive of teachers and students for example, by providing a conducive work environment (C) and teaching resources (C and G), motivating (C) and appreciating (F) teachers, and giving priority to student learning (F). Participant A stated that their school management is “fairly supportive” but does not provide opportunities for continuous teacher development. Support from school management is key in curriculum implementation, as participant G explained, “The instruction methods depends wholly on the available teaching aids and this is tied to the support from the college admin.”

School policies guide teachers in performing their duties, for example, participants A stated that it is mandatory to have lesson plans, and this helps them in preparing for teaching. Teachers were reported to have autonomy in planning their activities and teaching to meet set objectives based on school policies. Nurse teachers in the represented schools were reported to collaborate both formally and informally, for example, during departmental meetings (D and F), planning of school schedules (E), allocation subjects for teaching (A, B,

C, and E), setting and marking examinations (A, C, and D), clinical assessments (B and C), student research and case study supervision, and by sharing reference materials and new knowledge (E and F). Participant D reported that they have sporting activities and welfare organization for teachers.

Collaboration between teachers was reported as one of the ways of improving instruction practices, for instance, meetings to review workload and discuss challenges affecting teaching (G) and peer feedback on areas of improvement for each lecturer (C). The expert commented that team teaching is rare, perhaps due to teacher workload.

Students are involved in ongoing curriculum review as their feedback is sought after both theoretical and practical experiences (A, B, C, D, E and G). Participant E reported that students are involved in lesson planning and participant D reported that they have meetings with students.

“They [students] are always asked to evaluate the course and make suggestions on possible changes on the curriculum at the end of the block session They are involved in planning of lessons They share the best method of instruction that worked best for them during sessions” – participant E

On curriculum implementation, participant F shared that sometimes the students’ reception of an instruction method can affect its utilization. Participants C and G also reported that feedback from students guides teaching. Five respondents felt instruction in their schools was generally student-centered, and the first evidence for this was that teachers give students objectives and assignments to research and present (A, B, and G) on various topics. The second was that teachers emphasize self-directed learning (D), and the third was that school policies are designed to support student centered learning (G). Participant F wrote:

“Initially when I started it was mainly teacher oriented but a lot of transformation in nursing training has happened. Currently the training is student centered. The various methodologies that are being advocated are to ensure the students take charge of their learning e.g. fish bowl technique, group discussions.” .

Despite these efforts, participant D observed a lack enthusiasm for self-directed learning among their students.

“... teacher focuses on meeting objectives whereas the learners want to be passive. Especially in the clinical areas students are not eager to learn. they assume that learning should occur in the class setting”. - Participant D

Instruction in schools 3 and 5 was reported to be mainly teacher-centered. Predominant use of teacher centered instruction in school 3 was attributed to few books and lack of internet connection, which make the students dependent on the teacher for notes. In the expert's opinion, the delivery of the huge curriculum content within a short period makes it difficult to apply learner centered teaching methods which require more learner participation.

On role modeling and social learning, participant C, reported that lecturers act as role models to students through punctuality, grooming, time management, effective communication, decision making and problem solving. Participant D stated that teachers act as role models by being well prepared for lessons, demonstrating the right attitude and providing counseling when needed. Participant G explained that teachers have the clinical and research project supervision hours and skills lab sessions to demonstrate nursing practice to students. Respondent B thought lecturers have adequate opportunity to act as role models because they have time for student supervision. Respondents A, F and G felt opportunities for teachers to act as role models was inadequate because the heavy classroom workload left teachers with little time to spend with students in clinical practice areas.

“Opportunities are available but may not be adequate especially due to the heavy workload. The lecturers sometimes find themselves too involved in classroom work and just spare few minutes in the practical areas to monitor students progress. ...” - participant F

The expert reported that teachers have limited instances to act as role models in research because most nurse educators do not actively conduct research due to lack of time and research experience.

5.3.2 External relationships with other nursing training institutions and stakeholders

Institutions 2 and 3 have exchange programs with other nursing schools while institution 4 collaborates through interinstitutional conferences. Participant E reported that they share clinical sites with other institutions and encourage their students to interact. Participant F mentioned that they collaborate when they meet to moderate and mark joint exams and that teachers from different schools keep in contact with each other through social media. Representatives for institutions 1 and 7 reported there being no collaboration with other nurse training institutions.

All respondents reported that their institutions have good relationship with their teaching hospital staff. The hospital staff guide and supervise the students in the clinical area and assist during clinical assessments (A). Sometimes they can also be called upon to teach students in school (E). School 6 was reported to have a memorandum of understanding that guides their relationship with the hospital in addition regular joint meetings to evaluate student learning. School 2 offers professional development to hospital staff. The expert reported having observed only minimal collaboration with hospital staff, mainly in assessing students, but also explained that very few clinical staff would want to collaborate when there is no payment involved.

All schools were reported to have a good relationship with the communities they are based in. The surrounding community is seen as a valuable resource to the school and good relationships ensure wellbeing and security of the school community. School 2 was reported to offer corporate services and scholarships to students from the local community. School 3 invites the community members to their graduation parties, camps and charity walks. Respondent D stated that their school (4) has partnerships and participates in stakeholder meetings.

” the school has good relationship with the community. some of our students stay in the nearby community, the students also participate in community interventions such as provision of health education and immunization the

school has photocopier that serves the community some of the hospital staff are called to teach our students” –Participant E

Summary

The prevalent social-political arrangements and relationships between different players in the school ecosystem affect teachers’ practices, for instance, memoranda of understanding guide collaboration with partner institutions. The support from school administration ensures provision of resources and moral support, peer relationships facilitate sharing of workload and best practices, and promotes teachers’ welfare. The teachers describe an ongoing transition from teacher-centered towards student centered teaching approaches in the nursing schools, and how this is dependent on teacher knowledge of student-centered teaching methods and availability of material economic architectures such as faculty numbers and resources that support independent student learning. Scarcity of material economic resources affect the relationships between teachers and students, for example, when there is a large student to teacher ratio, or when teachers do not visit students in clinical placement areas regularly, leading to lost opportunities for role modeling. Interinstitutional partnership and collaboration (SPA) enable sharing of knowledge (CDA) and material economic resources, for instance, when hospital staff are called upon to teach students. Good relationships with stakeholders and communities support school operations and promotes a sense of wellbeing. It is evident that lack of material-economic resources prevents adherence to the NCK policies and standards, for instance, some nursing schools have not met most of the set standards from the accreditation checklist.

5.4 Overall impressions on how practice architectures affect teachers’ work and teachers’ recommendations for improvement of nursing education

The data collected concur with the theory that practice architectures are utilized in the entwined intersubjective space to support the *sayings, doings, and relating*s

of nursing education. The architectures from the three domains are often utilized simultaneously during instruction, for example, teachers utilize their knowledge (CDA) of nursing subject matter (*sayings*), teaching equipment (MEA) to perform acts such as demonstration (*doings*) and follow the student involvement policy (SPA) to direct their interactions (*relatings*). Moreover, it was noted that existing architectures enable the acquisition, development and utilization of other architectures. For instance, opportunities for teacher professional development (CDA) can be realized through collaboration with other institutions (SPA). It was reported that a lack of specially trained personnel (CDA) hinders utilization of the high-fidelity manikins (MEA) in school 5, and inadequate teacher professional development (CDA) was attributed to lack of funding (MEA). Lastly, teacher creativity (CDA) is understood as necessitated by, and a remedy for, material-economic resource shortages.

“... sometimes unforeseen circumstances may occur like power blackout and this requires one to be creative to ensure the content is covered all the same.” – Participant G

Figure 6 illustrates the utilization of architectures in the intersubjective space and the reciprocal relationships between architectures from different domains.

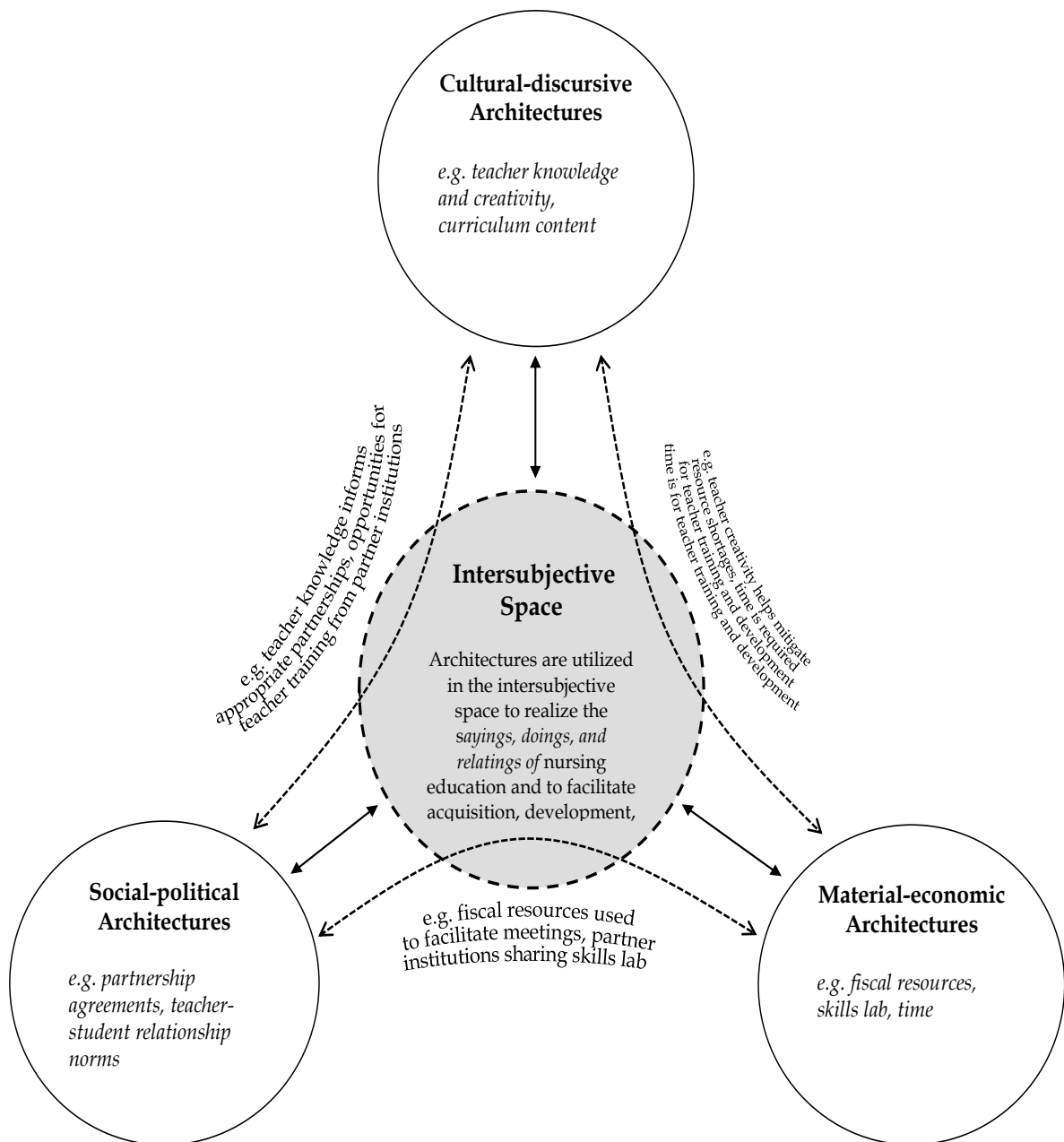


Figure 6. Interactions among architectures and utilization of architectures. Architectures from the different domains are utilized in the intersubjective space, different architectures influence the acquisition, development, and utilization of each other.

All, except participant D felt that despite the challenges, they are generally able to utilize their chosen method of instruction and implement the curriculum. Figure 7 represents teacher's general level of satisfaction with nurse training outcomes, that is, nursing students' acquisition and development

of nursing skills. The teachers were least satisfied with the development of students self-directed learning skills.

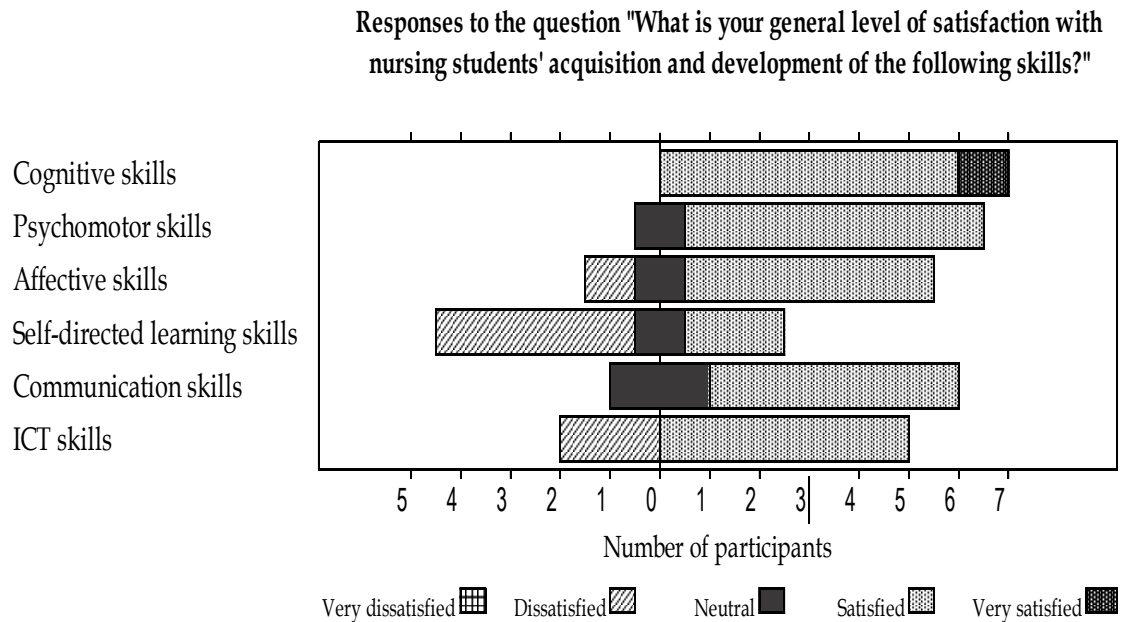


Figure 7. Responses to the question “What is your general level of satisfaction with nursing students’ acquisition and development of the following skills?” Each person answered one of five levels of satisfaction.

Some factors affecting the development of self-directed learning skills among students include lack of resources for independent studies and use of teacher-centered teaching approaches. Provision of these resources is therefore essential in order to prepare nurses who can work autonomously and provide leadership in nursing and healthcare.

5.5 Participants recommendations for improvement of nursing education in Kenya

Improvement of nursing education requires joint efforts of nurse teachers, nursing school administration, the regulatory bodies and other stakeholders. Participants’ recommendations on how nursing education can be improved by these different players were categorized into cultural-discursive, material-economic, and social-political domains.

5.5.1 Recommendations for cultural-discursive domain

In this category are recommendations concerning nurse teacher preparation and development and KRCHN diploma curriculum improvement.

According to participant A, nurse teachers need to be well prepared before starting their teaching careers. Nurse teacher competency is important because 'teachers have great influence on the outcomes of nursing education.

According to participant A, a "Nurse educator is an important person in our profession. By empowering this group of people and giving them support, the final product will be a very useful person in Healthcare system.". The expert 's opinion was that the NCK should revise minimum requirements for preparation of nurse educators. He suggested a one-year course to effectively prepare prospective lecturers on curriculum design and teaching and introduction of compulsory induction courses for novice lecturers to help develop their confidence in teaching. It was further suggested that nurse teachers can improve their knowledge and competency by organizing learning sessions on emerging issues and new practices (C, D, E, F, and G) and utilizing available resources (C and E). Participant D recommended that more emphasis be placed on research development to improve nursing education.

The respondents recommended improvement of training curriculum and proper selection of students into the KRCHN training program. Respondent B recommended proper selection of students at entry point and respondent G stated that "selection of students should be based on merit" The issues concerning student selection practices were not elaborated. When asked about his satisfaction with minimum entry requirements for the diploma in nursing program, the expert responded:

"Very satisfied. Though even now the government has lowered cutoff points due to large failures experienced in [entry] exams of late. This am afraid will dilute entry point further"

5.5.2 Recommendations for material -economic domain

Teachers B, C, D, and E would like nursing school management to provide resources for nurse educators' continuous professional development, for example, they should ensure teachers are trained on simulation and how to use high fidelity manikins. The teachers also emphasized the need for adequate and better quality of physical structures, equipment and materials for classrooms, skills lab and other learning spaces (B, C, D, E, F). The schools should also employ adequate teachers (A, F, and G) and hire clinical instructors (A, C, and G). This will make class sizes more manageable and enable teachers to undertake their diverse roles, for example they will have time for student supervision and mentorship (C). It was recommended that teaching hospitals should be well staffed, with ideal nurse-patient ratio (C), have basic requirements (E).

The expert opinion was that due to understaffing and prevalent demotivation and work overload among lecturers, it is hard to predict possible solutions for lecturers to effectively attend to their diverse roles. In his experience, the priority for teachers has always been teaching. He observed that in the university this balancing of roles is being encouraged to some extent as a lecturer can take a maximum of teaching hours per semester leaving free hours to engage in other key activities like research.

5.5.3 Recommendations for social - political domain

There were calls for the NCK to involve stakeholders and to exercise more authority to enforce policies and ensure accountability of nursing schools in the delivery of quality nursing education. Four nurse teachers (A, B, C, and F) recommended that the NCK should perform regular monitoring and supportive follow ups to ensure that the set training standards and policies are met and maintained. Participant B suggested devolution of regulatory services for better monitoring of training institutions. Participant G thought there should be regular consultative meetings between regulatory bodies and nurse training institutions with bottom-up approach whereby the views of teaching staff are incorpo-

rated. It was further suggested that the nurse training guidelines should be reviewed every two years to keep pace with changing needs (D and E) and that regulatory policies should support teaching and learning A. The expert recommended that the NCK should close the understaffed colleges until they hire enough qualified teaching staff.

“ As stipulated by the Nursing Council of Kenya there are requirements for starting up a nursing training institution. If these are met, the ideal nursing education in Kenya will come to pass.” – Participant F

Nurse teachers were also encouraged to play a more active role in establishment of training architectures. According to the expert, in most cases, nurse teachers play no significant role in resource acquisition other than listing the required equipment for the school managers to purchase. The participants recommended that nurse teachers need to advocate for resource availability A, F, and G better staffing (F and G), opportunities for their continuous professional development A. Participant B suggested that nurse teachers get actively involved in professional network groups through available channels, for instance social media. Participant G also recommended close collaboration with other training institutions for benchmarking purposes.

“As majority face shortage of teaching and learning resources, the main solution is to have the management provide support to the teaching and learning activities. This would be through procurement of enough teaching and learning tools. At the same time the stipulated ratio of 1:10 should be adhered to by ensuring the lecturers are enough to cover the work load to give quality teaching to the students” – Participant F

Concerning relationships among the core participants in nursing education, it was recommended that the nurse school management should provide oversight and support learning (F and G). They should encourage regular consultative meetings among staff to strengthen their instructional practices (G) and ensure adequate opportunities for teacher student interaction in the clinical area to enable role modelling and mentorship (C). It was also recommended that nurse training institutions actively collaborate with other

training institutions (G) and different levels of government in designing and implementing nursing training so that graduate nurses can cater to the needs of the community (F). Closer collaboration with hospital nurses will promote collective responsibility for student learning among teaching and hospital staff (C).

6 DISCUSSION

6.1 Study limitation

This was an exploration into the perceptions of nurse educators concerning their work conditions. The study participation was limited to nurse teachers in the KRCHN diploma program and did not include perspectives from other stakeholders such as students. The findings of the inquiry were not intended to be generalized but as a starting point for understanding the conditions of nurse education in Kenya. Seven respondents from seven nurse training institutions were recruited for the study. More respondents and institutions offering different levels of training would perhaps provide greater insight into these conditions. Nevertheless, important considerations have come to light through the data collected.

The findings highlight the strengths and areas of improvement of the practice architectures for nursing training and illustrate the complex interrelationship among the practice architectures and how the architectures influence nurse teachers' practices.

6.1 Teacher preparation and continuous professional development

The results show that teacher knowledge and skills affect their ability to implement the nurse training curriculum and to actively participate in the acquisition and development of other practice architectures. The initial nurse teacher educational programs prepared them for their roles as teachers by incorporating courses in nursing subjects, educational psychology, curriculum development, and pedagogy. It was noted, however, that there is continuous transformation of instructional practices, for instance, there is a shift towards student-centered instructional methods and use of simulation which were not emphasized during the initial training of some respondents. For this reason,

initial teacher preparation should anticipate and as much as possible prepare teachers for changing times and teacher preparation curricula should be revised accordingly. Schools also require robust material-economic architectures and social-political support for teachers' continuous professional development throughout their career to keep abreast with changing times. Newer learning pedagogies are emerging all the time and teachers need to be continuously updated on their application and to research on their usefulness in their practice contexts. Formal training is needed whenever changes in the work environment occur, for example, when schools acquire new teaching equipment, teachers should have formal training on their role and operation. Without this, the acquired resources will not be fully utilized (Bryant & Ogle, 2015). Another observation was that there are no formal mentorship plans for novice teachers. Mentorship, of new faculty, either formal or informal, can help them to transition into their teaching role (Gerolamo & Roemer, 2011; Rich & Nugent, 2010).

There is need to apply evidence-based methods to re-examine the practice philosophies, appropriateness of curriculum, teaching and assessment methods, and the best leadership approaches for changing times and future nursing (Jamshidi, 2012; Kemmis, 2013). There seems to be only a few studies on nursing education conducted in Africa and Kenya. Kemmis (2013) calls upon educational participants to strengthen the capacities and resources for educators to conduct autonomous action research on their practices. Kemmis writes that educators have been overly concerned with research aimed at comparing learning outcomes, instead of conducting research aimed at finding 'what works best'. There is need to strengthen the capacity and resources of African and Kenyan nurse educators to conduct local research to inform local practices. Increased significant research by nurses will boost the maturation and increased public recognition of the nursing profession which currently lags far behind the related fields like medicine and public health in breakthrough scientific discoveries (Potempa et al., 2009).

Besides research, teachers need entrepreneurship training to appraise and tackle the many challenges in their daily work. In the recommendations, the

teachers place the burden of providing material-economic resources on the school management. Given the vast resources required to train nurses, nurse educators must seek alternative funding (Potempa et al., 2009) and entrepreneurship is key in this regard. The findings suggest that teacher creativity is more focused on solving existing material-economic resource problems, instead of being proactively channeled towards innovation of cost friendly teaching and learning resources. Given the high cost of imported equipment like manikins, invention of local alternatives is needed for sustainable nurse training programs. Another important finding was that individual teacher agency plays a key role in their professional development and finding solutions to the problems encountered, for instance, some teachers make individual effort with collaborative institutions for their CPD, and some teachers go a step further and utilize personal resources to ensure work does not stall.

6.2 KRCHN training curriculum

While respondents were mostly satisfied with the KRCHN curriculum, some felt the scope is too broad and do not incorporate skills like entrepreneurship which are important in today's world. The block system of curriculum delivery was reported to cause a disconnect between theory and practice. It is evident that implementation of the curriculum is constrained by resource shortages, leading to incoherence between the curriculum objectives and the actual outcomes. Inadequate learning resources for students make them overly reliant on the teacher for knowledge and information. This denies students the opportunity to learn how to perform independent enquiry and practice agency. It appears that despite the wide scope of the nurse training curriculum, in practice, nurses are mainly dependent on doctors' orders concerning patient care. Perhaps it is because nurses take a background role in patient care that they are being sidelined in the national health policy-making arena.

In addition to traditional nursing competencies, nurse teachers need to question whether we are teaching the necessary skills for 21st century nurses and what these skills are. One of the key areas is entrepreneurship education which has been necessitated by changing work and societal practices. Nowadays success in the work place requires combinations of various skills, as opposed to the past, when strict division of roles required people to have specific skill sets. Entrepreneurship education is expected to prepare learners to revitalize cross sectoral economic growth, and boost social empowerment, democracy, and active citizenship. Entrepreneurial individuals are more employable and can also create more employment opportunities in a shrinking job market (European Commission, 2014). Entrepreneurial skills help to “turn ideas into action” and include critical thinking, problem solving, decision-making, communication, teamwork, collaboration, co-operation, and negotiation skills. Incorporating entrepreneurial projects in the school curriculum can teach learners to take initiative, evaluate and take risks, and develop their creativity, entrepreneurial spirit, financing techniques and ethics (European Commission, 2014).

6.3 Material-economic architectures

From the findings, it was evident that material economic architectures influence teacher employment and development, implementation of curriculum, and cross-institutional cooperation. For example, high faculty workload limits the quality of instruction and student learning when it leads to utilization of more teacher centered instruction methods. Global faculty shortages is one of the critical factors affecting nursing education today and the funding for graduate education to prepare faculty needs to be enhanced (Potempa et al., 2009). Adequate faculty improves quality of instruction, especially when using approaches like simulation which may require more than one teacher in a learning session (Bryant & Ogle, 2015). Faculty shortages limit amount of time teachers spend with students in clinical placement areas when teachers divide

their time between the school and clinical practice facilities. Consequently, there are lost opportunities for teachers to act as role models for students in nursing practice. Limited resources and time for teachers to conduct research and practice clinical nursing makes the teachers practices more about *sayings* and less about the requisite *relatings* and *doings*. Less teacher involvement in clinical teaching may result in inconsistencies between theoretical and practical student learning. In a cross-sectional descriptive study by Jamshidi (2012) on challenges of clinical teaching in nursing skills and lifelong learning, eighty eight percent of respondents identified inconsistency between theoretical and practical training as a problem. This is an important finding since nursing involves the application of learned content in practice. In Kenya student nurses are mostly supervised by clinical nurses, with faculty visiting occasionally. The shortage of clinical nurses in health facilities impairs student supervision, and safety concerns have been raised about students being left to perform procedures without supervision.

An example of an entrepreneurial approach to managing educators' complex and heavy workload is the Oregon Consortium for Nursing Education (OCNE) approach (Gerolamo & Roemer, 2011). Potempa et al. (2009) propose that instead of current intensive faculty oversight of prelicensure students during practical placements in many parts of the world, a system of clinical training where students can work as junior partners with staff could ease the workload on faculty. Another variant of this proposal is adopting the use of hierarchical model of clinical training and supervision like that of medicine where students are trained in teams consisting of interns, residents, fellows and consultants. This way, faculty can have more time to focus on scholarship, research, evidence-based practice, and staff development (Potempa *et al* (2009).

There are calls for intensified resourcing to enable better staffing and continuous professional development for teachers. Support staff are also needed to assist faculty in their duties, allowing faculty to focus on meeting learner needs for instance skills lab technician and IT technician can assist with maintenance and operation of equipment and software (Bar-on, Yucha, & Kinsey, 2013; Bryant & Ogle, 2015). To mitigate faculty shortages in nursing

education, there is need to address barriers to development of nursing faculty, for instance, requirements of long clinical practice, funding for further education, and better pay (Potempa et al., 2009). Other solutions to manage nurse educator workloads include partnerships between nursing schools, hospitals, and other institutions, for example, engagement of medicine, psychology and public health to teach some subjects can help address faculty shortage (Gerolamo & Roemer, 2011, Potempa et al., 2009). Some nursing schools were reported to be utilizing locally available resources, for example engaging specialist personnel from partner health facilities to teach certain subjects. Using locally available materials can help save costs and promote innovation and culturally appropriate experiences. Because of shortage of resources, teachers need to be creative, for example using cheap available materials like paper screens in place of real walls in case separate rooms are needed in the skills lab (Bryant & Ogle, 2015), or using community members as standard patients instead of high fidelity manikins. Above and beyond acquisition of new resources, the existing ones need to be maintained and kept up to date.

Besides adequate staffing, teaching resources are needed for successful curriculum implementation. Depending on the complexity of the content being taught, different teaching methods and media have varying effectiveness as succinctly put in the saying, *"I Hear and I forget, I see and I remember, I do and I understand"* Teaching approaches like simulation allow participants to demonstrate and practice through steps of a physical task instead of merely visualizing or describing what they would do (Bryant & Ogle, 2015). The varying effectiveness of different instructional methods and media justifies the need of a variety instructional resources design, implement, and evaluate what they deem the best instructional method for each session.

6.4 Social political architectures

The nurse teachers believed enforcement of NCK policies on nursing education will lead to improved practice architectures. The NCK has provided comprehensive checklist for prerequisite architectures for nurse training institutions. It appears, however, that the schools strive to meet these requirements for their initial approval assessments, only to continue thereafter with inadequate resources as the student population grows. Continuous monitoring and support from regulatory institutions is valuable in development and maintenance of practice architectures.

The teachers also recommend increased participation and collaboration between the stakeholders in nursing education. It appears that not all opportunities for collaboration among the stakeholders have been exploited, for example, the participants recommended that teachers should advocate for managers to provide material-economic resources but did not mention how teachers themselves can contribute to the acquisition of these resources. Also, not much was said regarding collaboration between different nursing schools. Interinstitutional and interprofessional collaboration enables sharing of scarce and expensive resources (Bar-on et al., 2013) and interdisciplinary collaboration in practice environments can also improve scholarship, service, and curriculum implementation (Potempa et al., 2009).

Increasing globalization presents networking opportunities with nursing education institutions and leaders around the world. Increasing access to ICT and social media also presents diverse prospects for nurse educators to collaborate with peers both locally and globally and some of the represented nurse training institutions are already making use of available collaboration opportunities. To increase public and government recognition and support, both political and financial, for the development of the nursing profession, nurses must increase the visibility of contributions of nursing to quality healthcare provision in the media and policy platforms, and to garner support from colleagues in other healthcare disciplines (Potempa et al., 2009).

7 CONCLUSION

The different practice architectures impact the acquisition and development of each other, therefore, it is important that they are developed in tandem, to synergize the cultivation of the desired *sayings, doings, and relatings* in nursing education. The teachers describe the strengths of their initial preparation for the teaching role, but gaps have been reported in the architectures for continuous teacher development in response to changing needs in health care and nursing education. Material-economic resource constraints remains a major challenge to nurse training institutions in Kenya and creative nurse teachers are needed to come up with sustainable solutions. Cooperation between nursing schools and other relevant stakeholders is currently limited, even though partnerships and collaboration may help to alleviate some of the hardships, for instance, by enabling sharing of knowledge and scarce resources.

To secure the future good for the nurses, the nursing profession, and communities, there must be deliberate planning to prepare nurses who can be agents of change in healthcare and the larger society. Site architectures prefigure our practices thus educators and must identify, provide, and continuously reevaluate the appropriate arrangements for the kind of educational outcomes they envision (Kemmis, 2013). Nurse teachers, through their practices, influence future practices of nurse students, therefore, it is important that they create in nurse training sites “a culture based on reason, a productive and sustainable economy and environment, and a just and democratic society” (Kemmis, 2013). This way, nurse students get involved in these concepts in praxis, rather than just theoretically.

The nurse teachers’ recommendations can be a great starting point for improvement of nursing education in Kenya. Further participatory research of how the existing architectures affect teachers’ practices will provide opportunity for all stakeholders to communicate and take collective action on improving architectures, and consequently, practices and outcomes in nursing education.

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APPENDICES

Appendix A Questionnaire for teacher perceptions

Nurse educator perceptions of preconditions and support structures for nursing skills instruction in Kenya

Thank you for agreeing to participate in this study. The purpose is to learn about how nurse educators perceive the preconditions and support structures for instruction and, by extension, learning in nursing education. The researcher intends to collect nurse teachers' opinions on whether the current preconditions and structures support, limit, or constrain the instruction and learning of nursing skills, and how nursing education can be improved upon. In this study, teaching and instruction have the same meaning.

This study is conducted to fulfill the requirements for qualification from a master's program in education at the University of Jyväskylä, Finland. The information you give will remain confidential and will not be used for purposes other than those stated in the informed consent form. Data will be securely stored and anonymized. Your personal information, or your institution will not be identified in any way in the study results.

Please take time to read the explanations preceding each section carefully before responding to the questions. Feel free to give as much explanation as you can. The use of examples is highly encouraged.

PART 1: INTRODUCTION

1. Sex
Male Female
2. Years of experience as a nurse educator
3. Current work institution
4. Work institution type
Public Private Mission Other (please specify)
5. Current job title
6. Duration of work in current workplace in years

PART 2: TEACHER INITIAL TRAINING AND CONTINUOUS PROFESSIONAL DEVELOPMENT

During their studies, nursing students are expected to develop certain nursing skills, for example, cognitive, psychomotor, affective, communication, self-directed learning and ICT skills. Certain prerequisites are necessary for teachers to be able to instruct/teach students well, and for students to practice so that they can acquire these skills by the end of their training. In this section, you will be asked to give your opinions on these preconditions based on your experiences as a nurse teacher.

One of the preconditions is teacher initial preparation and continuous professional development. The Nursing Council of Kenya requires that nurse tutors/lecturers teaching in diploma level programs have at least a bachelor's degree or a higher diploma in nursing. The nursing council also requires that nurse teachers have at least two years of clinical experience and continuous professional development (CPD) training related to their specialization area and instructional skills and that they have at least 2 hours of clinical practice a week.

You are being asked about your opinion, based on your overall experience as a nurse educator, as to whether training in these programs adequately prepare nurses to teach the required skills to nurse students.

7. List of completed and ongoing professional qualification(s) (e.g. Master's degree, Bachelor's degree, higher diploma, diploma, certificate, other) and year of completion
8. List of continuous professional development training attended in past two years
9. In what ways did the program(s) you underwent (Bachelor's degree, higher diploma, or other) prepare you for the role of teaching?
10. Are there components that were not included in your training program(s) that you think might have helped to better prepare you for the role of teaching? Please explain
11. What are your thoughts about the requirement that nurse teachers have at least 2 hours of clinical practice per week?

PART 3: CONTINUOUS PROFESSIONAL DEVELOPMENT IN CURRENT WORK INSTITUTION

The following questions regard your experiences in your current work institution. If you are currently teaching in more than one institution, please focus on your primary workplace.

12. In your current work institution, do you specialize in teaching a particular area of nursing, for example, medical-surgical, community health, or midwifery? Please elaborate.
13. In your current work institution, what opportunities are available for teachers' CPD as pertains to nursing area of specialization?
14. What opportunities are available in your current work institution for teachers' CPD as pertains to instructional or teaching skills?

PART 4: EXPERIENCE USING DIFFERENT INSTRUCTIONAL METHODS

For the following questions, please reflect on your personal experiences while using different types of instruction/teaching methods in your current work institution. Here, instructional method is used to mean the principles and activities used in teaching and learning.

15. What factors influence your choice of teaching methods? Please include all you can think of.
16. Do you feel you are generally able to effectively utilize the chosen methods of instruction? Please elaborate
17. What factors affect your ability to utilize the chosen method(s) of instruction?
18. How do you keep abreast with newer/emerging instructional methods for teaching nursing skills?

PART 5: CURRICULUM DESIGN AND EVALUATION IN CURRENT WORK INSTITUTION

In this section, please give your opinions and thoughts about the curriculum content and evaluation in your current work institution.

19. What are your views on the scope and content (number and details of subjects) of the curriculum, that is, what students are expected to learn in the program?
20. Do you think the curriculum objectives are locally or regionally relevant, based on the location of your institution? Please elaborate.
21. What are the activities or procedures for reviewing effectiveness of teaching and learning at your institution?
22. What are the practices for improving instruction in your current work institution?

PART 6: INFRASTRUCTURE AND EQUIPMENT IN CURRENT WORK INSTITUTION

Please explain how presence or absence of the following resources in your current institution affect instruction and learning.

23. Classrooms and furniture
24. Teaching equipment and materials e.g. computers charts, boards, projectors
25. Skills lab and skills lab equipment and materials
26. Textbooks and reference materials for teachers
27. Textbooks and reference materials for students
28. Computers for teachers
29. Computers for students
30. Internet connectivity
31. Transportation to practical placement areas for teachers
32. Teacher-student ratio
33. Support personnel e.g. ICT technician, librarian, office assistant, e.t.c.
34. Any other resource, describe
35. What are your thoughts about how well your current clinical placement health facilities support instruction and student learning of nursing skills?
36. How satisfied are you with the current time schedules for various school activities, for example, the master rotation plan, and time allocated for teaching, student supervision, meetings e.t.c.? Please illustrate
37. The use of locally available teaching or learning resources is often emphasized. What are some examples of how your institution utilizes locally available resources for instruction and learning.

PART 7: SOCIO-RELATIONAL PRACTICES IN CURRENT WORKPLACE

Please give your impressions regarding the relationships between some key players in your current work environment

38. What are your views as to whether the school management is supportive of teachers work and student learning?
39. Do teachers have autonomy in planning and implementing instruction/teaching activities? Please explain.
40. In what ways do teachers collaborate with one another regarding teaching and learning?
41. How, and to what extent are students involved in the design, management and evaluation of the curriculum?
42. In their day to day commitments, do lecturers have adequate opportunity to act as role models for students to learn the key nursing skills? Please give examples
43. In what ways does your institution collaborate with other nursing education institutions to promote instruction and student learning experiences?
44. What is the relationship between the nursing school and other stakeholders, e.g. practice hospital staff and surrounding community? For example, to what extent is the surrounding community involved in the school activities?

PART 8: GENERAL EXPERIENCES

In this section, you are requested to give your overall opinion, based on your experiences as a nurse educator (in your current and any past work institutions). Please give examples where possible

Copy of Nurse Educator perceptions on preconditions and support structures for nursing skills

instruction in Kenya

45. What are your best practices in preparing for and implementing instruction/teaching? In other words, which factors help you in preparing teaching content and lesson plans?

46. Please describe any challenges/difficulties you have experienced in selection or implementation of instructional methods for nursing skills teaching?

47. Would you say instruction in nursing education in the institutions you have taught in is generally teacher- or student- centered? Please give relevant example(s)

48. What is your general level of satisfaction with nursing students' acquisition and development of the following skills? (Very dissatisfied Dissatisfied Neutral Satisfied Very satisfied)

Cognitive skills

Psychomotor skills

Affective skills

Self-directed learning

skills

Communication skills

ICT skills

PART 9: POSSIBLE SOLUTIONS FOR CHALLENGES IN NURSING INSTRUCTION

Before answering the following questions, please consider any challenges or difficulties affecting instruction and learning that you mentioned in the preceding sections

49. In your opinion, what are some of the ways that nurse teachers can manage the challenges faced in selection and implementation of instruction methods? Please give examples where possible

50. What could you recommend for improving practice at institutional level?

51. What could you recommend for improving practice at regulatory level?

52. Considering the future, what supportive structures or preconditions would you like to see if we are to achieve ideal nursing education in Kenya?

53. Please give any other comments or remarks you have on the topic

Copy of Nurse Educator perceptions on preconditions and support

Thank you!

Appendix B Questionnaire for expert opinion

Nurse educator perceptions of preconditions and support structures for nursing skills instruction in Kenya

Thank you for agreeing to participate in this study. The purpose is to learn about how nurse educators perceive the preconditions and support structures for instruction. The researcher intends to collect nurse teachers' opinions on whether the current preconditions and structures support, limit, or constrain the instruction and learning of nursing skills, and how nursing education can be improved upon. In this study, teaching and instruction have the same meaning.

The terms preconditions and support structures for instruction refer to the requirements that need to be in place for teachers to do their work effectively.

This study is conducted to fulfill the requirements for qualification from a Master's program in education at the University of Jyväskylä, Finland. The information you give will remain confidential and will not be used for purposes other than those stated in the informed consent form. Data will be securely stored and anonymized. Your personal information, or your work institution(s) will not be identified in any way in the study results.

Please take time to read the explanations preceding each section carefully before responding to the questions. Feel free to give as much explanation as you can. The use of examples is highly encouraged.

EXPERT PROFILE

a. Education and certifications (*please add rows if needed*):

Education and certifications	Year of (expected) completion

b. Total years of experience in nursing education: _____ years

c. Previous work in nursing and nursing education (*please add rows if needed*):

Year (s)	Institution	Role or assignment

d. Current role/assignment:

PART 1: TEACHER PREPARATION

1. Nurse teachers have diverse and complex roles, including teaching (design, implementation, and evaluation of instruction), clinical practice, clinical supervision, research, and management. This requires them to be well prepared and undertake continuous professional development (CPD) and lifelong learning to update and improve their skills in all these areas of responsibilities. Currently, the nursing council of Kenya requires that nurse educators for the diploma level KRCHN program have at least a higher diploma, or a Bachelor’s degree in Nursing to qualify as an educator.

Based on your experience, to what extent do these programs prepare nurses for these roles and what can be improved upon? Please write responses under the following sub headings:

Teaching (curriculum design, implementation, and evaluation of instruction)

Clinical practice

Clinical supervision

Research

Management and Leadership

Other

2. Are there mentorship programs for nurse educators when they begin their teaching career?

3. Nurse educators are expected to undergo continuous professional development and to keep in touch with advances in clinical nursing practice and nursing education. In your opinion, how well have nurse educators fulfilled this expectation? What are some factors that encourage or limit teacher development?

4. Nurse educators must balance their time between teaching, clinical practice, clinical supervision, research, management, CPD, collaboration e.t.c. In my experience, it can be challenging to balance all these roles, especially in set-ups where teachers

have to travel to clinical areas for student supervision. Due to the high work load, teachers must prioritize the tasks, meaning some areas of responsibility, like research are relegated to the back burner, or completely ignored, and this has led to overreliance on research from the western world to inform nursing practice in Kenya. It appears to me that teaching takes most of the teachers' time.

Given that all these diverse roles are vital to nurse teachers capacity development and work, how have you handled this challenge in the past, or what are some of the possible solutions, so that nurse educators can carry out all these responsibilities effectively, ultimately providing quality education?

5. There is need for nurses to actively participate in national healthcare policy development and decision making. Currently healthcare policy and decision-making platforms in Kenya are dominated by the medical profession. What changes are needed in nursing education in Kenya for nurses to engage on a more equal level?

PART 2: CURRICULUM

Nurse training curricula development is guided by a training syllabus and other guidelines from the nursing council of Kenya.

6. What are your thoughts on the scope and content of the syllabus and curricula for the institutions you have worked with?
7. How satisfied are you with the minimum entry requirements for student admission into the KRCHN diploma program?
8. What are the strengths and shortcomings of the block system of clinical and theoretical training?

PART 3: RESOURCES

9. For nurse teachers to effectively carry out their responsibilities, certain resources are required and the NCK provides the minimum requirements for these. What are your thoughts on availability and adequacy of the following resources in the institutions you have worked with, and how does their availability and adequacy affect instruction and learning?

Classrooms and furniture

Teaching equipment and materials e.g. computers charts, boards, projectors

Skills lab and skills lab equipment and materials

Textbooks and reference materials for teachers

Textbooks and reference materials for students

Computers for teachers

Computers for students

Internet connectivity

Transportation to practical placement areas for teachers

Faculty and teacher student ratio

Support staff e.g. librarian, IT tech, skills lab manager

Any other resource, describe

Clinical placement areas

Any other resources

10. What is the role of nurse teachers in the acquisition the required resources?

PART 4: WORK RELATIONSHIPS

11. What examples of collaboration have you seen between nurse educators and the following groups of people:

Fellow nurse educators within the same school

Executive management of the school or organization

Other staff within the same school or organization

Students

Clinical nurses and the interdisciplinary team within the clinical environment (e.g. doctors, clinical officers)

Community and other stakeholders

Educators from other nursing or medical training schools

12. From your experience, what opportunities are there for teachers to act as role models for students in the following areas:

Teaching

Clinical practice

Research

Any other

PART 5: OTHER

13. What other challenges have you seen regarding the preconditions and support structures for nursing skills instruction in Kenya

14. What other recommendations would you give for the enhancement of preconditions and support structures for nursing skills instruction in Kenya

Thank you.

Appendix C Informed consent document

INFORMED CONSENT FORM

Nurse educator perceptions of preconditions and support structures for nursing skills instruction in Kenya

Researcher: Linah Oule

Supervisor: Josephine Moate (BA hons, PGCE, MA, PhD)

Faculty of education and psychology

University of Jyväskylä, Finland

Introduction

My name is Linah Oule and I am a student at the Faculty of education and psychology, University of Jyväskylä, Finland. I am conducting a qualitative study on nurse educator perceptions regarding preconditions and support structures for nursing skills instruction (teaching or training) in Kenya as part of my master of education sciences studies.

Informed consent

You are being asked if you would like to take part in this study. You can decide if you want to participate in the study or not. Please take time to read the information carefully. Please let me know if there is anything that you do not understand or if you would like further information.

Purpose of the study

The purpose of the study is to learn about how nurse educators perceive the preconditions and support structures for instruction and learning in nursing education. The researcher intends to collect nurse teachers' opinions on whether the current preconditions and structures support, limit, or constrain the instruction and learning of nursing skills. You will also be asked about best practices, and to give recommendations on how the practice of nursing education can be improved upon. In some instances, you will be asked about the conditions in your current institution of practice, and sometimes you will be asked about your general experiences in nursing education.

The study results will be used to determine the need for a larger scale study on the subject. Such study will contribute to the ongoing discussion around continuous review of nursing training and work environment in nursing schools. The identified best practices and challenges are intended to inform nurse educators and relevant institutions with the aim of developing better practices. There is necessity to collectively assess and determine if we are in fact approaching nursing education the best way, or teaching in ways that support learners to acquire the skills that will benefit them in their professional and general life.

Eligibility criteria

To participate in the study, you must be currently working as a nurse educator (tutor or lecturer).

Study procedures/tasks

You will be asked to give detailed responses to questions in a questionnaire. The questions will cover aspects such as:

- Your professional training and work experience
- Your views on nurse training curriculum
- Your opinions regarding availability of instruction and learning resources
- Your recommendations on how instruction can be improved

It is estimated that the questionnaire may take between 1 hour to 1.5. hours to complete.

After completion, the questionnaire will be reviewed, and follow up questions will be sent to you in case any responses are not clear, or if further explanation is needed.

Compensation for time and connectivity costs.

A lump sum amount of KES 1200 will be paid to you following review of the questionnaire and responses to follow up questions, if any. This is compensation for time taken to complete questionnaire and to respond to any follow up questions and internet access costs.

Investigator compensation

The researcher is conducting this study as part of Master in education sciences requirement and is not receiving any funding for the study.

Number of subjects expected to participate

Between 6 to 10 lecturers/tutors currently working in medical training institutions offering Diploma in nursing training will be included in the study.

Confidentiality and data protection

The data collected from you will remain confidential and will not be used for purposes other than those stated in this form. Data will be securely stored and anonymized. Your personal information, or your institution will not be identified in any way in the study results. Study results may be posted in the university of Jyväskylä website.

Right to withdraw from the study

You have a right to withdraw from the study at any time after you agree to participate.

Removal or discontinuation from the study.

You may be removed from the study if you do not submit responses in time. In such instances, due to study timelines, the researcher will be obliged to find a replacement respondent.

Contacts

In case you have questions about the study or need clarification about certain questions in the process of completing the questionnaire, you can contact me through WhatsApp (+358 41 755 0915) or email (linah.a.oule@student.jyu.fi).

If you agree to participate in this study, please complete your name and date below and send this form back. I will thereafter send you the questionnaire to complete.

I have read and understood all the above information. I understand that it is up to me if I want to join the study and that I can leave the study at any time. I agree to join the research study.

NAME: _____ **DATE:** _____

Appendix D Examples from data analysis process

EXAMPLES FROM DATA ANALYSIS PROCESS

Example 1: Example of follow-up question for participant D

1. Original question

Please explain how presence or absence of the following resources in your current institution affect instruction and learning. (Resources listed as Questions 23 – 34)

2. Follow-up question

Thank you so much for taking time to complete the questionnaire and for your input. For questions 23 to 32, and question 34, you mention how these resources can support learning, however, it remains unclear whether your institution has these resources and whether they are adequate or satisfactory in your setting. Could you please provide this information?

3. Responses to follow-up questions appended to the original responses.

Original responses in blue text and follow-up responses in green text:

Q23 Classrooms and furniture

Classroom space is needed for successful teaching

Adequate furniture is required for effective training.

-We have adequate Furniture for the students and lecturers in class and office.

These resources support learning by giving the learners comfort while in class and furthermore our classes are free from noise

Q24 Teaching equipment and materials e.g. computers charts, boards, projectors

These materials are very important for Teaching.

Lack of these items will affect the effectiveness of teaching seriously and lowers the standard of the students.

-We have all these equipment in our institution.

Computers are used to provide the student with learning materials eg enotes, projectors are used as teaching aid in class.

Charts and boards are fixed in each classroom for ease of instruction and variation in teaching aid.

All these resources are available and support learning positively

Example 2: Example of data analysis process for question targeting a specific practice architecture

Q11 What are your thoughts about the requirement that nurse teachers have at least 2 hours of clinical practice per week?

Q11. Coded responses.

A: Its a good idea but its not practical.in my view lecturers only go to the practical areas when there are assessments.

B: It's a good idea given that nurses are naturally supposed to be teachers

C: It is important for nurse teachers to have a clinical practice because it helps have a touch with the reality in the clinical areas. In addition it keep them abreast with the changes in clinical paractice

D: It is a good idea

E: Two hours are not and will never be sufficient, as more practice improves learned skill. Besides, medicine is evolutionary and changes daily

F: I believe that as a nurse trainer it is important to have a practise session so as to be updated on current trends and practices that the students need to be taught on. In Kenya for example...management of certain conditions e.g HIV/AIDS are updated often and the lecturer should be informed as soon as the changes come out so as to update his/ her students.

G: The idea is good in updating oneself, except for clinical area staff are never comfortable since they improvise alot and take shortcuts due to perennial shortages

Q11 Summary from responses

In the summary below, red text was used to highlight ideas related to material-economic resources, blue for cultural-discursive aspects and green for socio-political factors.

There was a consensus that the NCK requirement that nurse teachers have at least two hours of clinical practice per week is a good idea and is **important for nurse educators to improve their skills (E) and keep in touch with the reality in the clinical areas (C)**. Moreover, the teachers felt that **medical practice, being evolutionary, changes constantly, and it is important for nurse lecturers to have timely updates** on current clinical practices (C, E, F, and G) that the **students need to be taught about, for example, HIV & AIDs management guidelines which are frequently updated (F)**. Even though all concurred that it was important to have clinical practice, respondent E thought **two hours a week are not enough**, and participant A stated that it was **not practical** because “lecturers only go to the practical areas when there are assessments.” Respondent G stated that “**clinical area staff are never comfortable** [with lecturers in the clinical area] since they improvise a lot and take shortcuts **due to perennial shortages**.” The expert thought that although some institutions have **developed clinical rotation hours** for their lecturers per week, the practice is not consistent because of **staff shortages**.

This was an open question soliciting teachers’ opinions about this mandatory practice condition. In the responses they indicate whether it is relevant to their work and their experiences in trying to fulfil it. This condition being a policy was can be categorized as a socio-political architecture. In practice, it would require setting up material-economic architectures (time and resources) and the end goal of teachers having two hours a week of practice is to maintain and develop their skills (**sayings, doings and relatings**). Their responses exemplify the interrelationships between among the architectures, and how the presence or absence of architectures influence people’s practices. We see that inadequate faculty and teacher workload prevents teachers from having two-hours-a-week of clinical practice.

Example 3: Data analysis of question eliciting responses touching on different practice architecture domains

Q45. What are your best practices in preparing for and implementing instruction/teaching? In other words, which factors help you in preparing teaching content and lesson plans?

This question was intended as an internal validity check on what and how practice architectures support teachers in preparing for instruction.

Q45. Coded responses.

A: Existing policies-its mandatory to have lesson plans always.

B: Age of the students, topic of study, availability of teaching materials

C: - objectives to be covered - Current evidence based practice - Recommendations by ministry of health, WHO, CDC - what learners already know (entry behaviour) -Current reference materials - previous evaluations by students on the subject teaching

D: Through implementation of institutional policies, supervision of curriculum activities

E: 1. emerging cases in the ward 2. clinical objectives 3. results after evaluation of students 4. available time

F: Mastery of the unit to be taught, availability of teaching and learning resources, support from management

G: Regular review of lecture notes and aligning them with updates. Reading widely then prepare lesson plan for every lesson.

Q45. Summary of factors that help teachers prepare for instruction

Material economic and temporal architectures such as availability of time and teaching and learning resources.

Social political architectures such as school policy requiring teachers to have lesson plans, consideration of previous evaluation feedback from students.

Cultural discursive architectures: Teacher mastery of the subject, reading and updating of oneself about current conditions.