APPLYING THE KIRKPATRICK MODEL TO DEVELOPING AN EFFECTIVE CHARGE NURSE COURSE IN THE SINGAPORE CONTEXT

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Abstract

Traditionally, nurse leaders are often promoted in unplanned fashion to perform the leadership role without necessary preparations often causing unnecessary stresses for their team. With the recognition of such leadership vacuum and the necessity of succession planning, the Charge Nurse (CN) role is created as part of the strategic priority to provide early exposure and role transition opportunities for Senior Staff Nurse (SSNs) with leadership potential.

The Singapore hospital recognised the importance of the CN's contributions on the efficiency and effectiveness of the operation of the units. An initiative is therefore put underway to commence on the development of a Charge Nurse Course (CNC). The author established the benchmark standards in the global context and built on the contextual differences for the development of course. On the other hand, the range of pedagogical approaches in the literature have also been considered extensively, especially if any of these theories have recent developments.

As such, this paper aims to provide a firm foundation in which the CNC development can be contextualized towards the local hospital by recognising the similarities and differences in the CN roles across the world in order to establish the best approaches and pedagogies for the development of an effective CNC – a course to prepare SSN for the newly developed CN role and facilitate leadership transition. Finally, the Kirkpatrick Model is employed in the development phases to maximise the course effectiveness and triangulate the proposed pedagogical approach in order to determine the best approach.

Keywords: Charge Nurse, Kirkpatrick Model, lifelong Learning, Motivation, Transfer of Learning.

1. Introduction

Alongside an aging population, increased patient care acuity and nursing shortage, it is often a steep learning curve and contributed to the stressful, overwhelming and traumatic transition experience of the new nurse leaders whose promotion are often unplanned (McCallin, & Frankson, 2010; Sherman, 2012), which, in return, causes unnecessary stresses for their team (Connelly et al, 2003).

As the Charge Nurse (CN)role is new to the hospital, a learning needs assessment (LNA) has been conducted from 3 aspects: organisational, task and person, together with job shadowing to the CNs and a cross-level survey involving the CNs, their team members and also nurse leaders (Nurse Managers/Senior Nurse Managers) to deepen the understanding on the current situation, context and expected CN role from different stakeholders.An effective Charge Nurse Course (CNC) will benefit SSNs for their professional and leadership development, the operation of the department and hospital, as well as enhance the quality of service to patients and their next-of-kin. As such, the aim of this paper is to establish,

through a literature review, to apply the Kirkpatrick Model for the development of an effective CNC.

The next section is the main literature review that is also the main methodology to data-mine relevant information for evaluation. As such, the section will include discussions on the competencies required and the kind of challenges faced by the CNs and an analysis on similar courses delivered by other counterparts. The Kirkpatrick model will be proposed to be incorporated in the development of CNC. Finally, the conclusion section will discuss the managerial and theoretical implications.

2. Literature Review

In this section, the Kirkpatrick model will be briefly discussed, followed by the roles and responsibilities of the CN from the literature will be defined and discussed, in order for a comparison to be made with the local context. Subsequently, the existing literature knowledge in the training and preparation of the CNs will be explored.

The Kirkpatrick Model

In order to determine the best pedagogical approach, there is a need to understand the measurements of effectiveness in professional training. This will allow the educator to maximise the programme effectiveness during the design phase and triangulate the proposal based on available empirical evidences during the planning and design phase.

The Kirkpatrick model

Kirkpatrick, (1960) as a goal-based evaluation model, has gained its popularity in training evaluation globally (Arthur et al 2003; Bates, 2004; Saad & Mat, 2013; Tennantet al, 2002). The model suggests 4 outcome measures to be performed in order: 1) reaction, 2) learning, 3) behaviour, and 4) organisational results (Kirkpatrick, 1960; Blanchard, & Thacker, 2007). Bates (2004) critically elucidated the 3 major limitations of the model: 1) incompleteness, 2) assumptions of causal linkage and 3) assumption of increasing importance of higher level. On the other hand, he also acknowledged its strengths in simplifying such a complex process of training evaluation into the components and highlighted the importance of examining multiple measures instead of a single outcome measure in training effectiveness (Bates, 2004).

The training development process consist of planning, design, implementation and evaluation phases. The Kirkpatrick (1960) model, as a training evaluation tool, is designed to measure the training effectiveness after the training. The intention of applying this model in this paper is to attempt to focus on the same measures/constructs in earlier phases of development process, to enhance the effectiveness of training, like using assessment rubrics to achieve better academic outcomes. Thus, the linear hierarchical arrangement of the 4 outcome measures criticize dare not applicable as they can be considered as independents.

Charge Nurses

Charge Nurses are the frontline leaders of the unit and plays a crucial role to ensure smooth operations, improved productivity and clients' satisfaction and it can be temporary or a permanent appointment(Sherman, 2012; Admi, & Moshe-Eilon, 2010; Wojciechowski et al, 2011).Though a recipe card is available in the local context to serve as a guide for new CNs, it is nonetheless focused on just present responsibilities and in a task-oriented manner without specifying the knowledge, skills and professional attitudes.

The findings from the LNA (job shadowing and cross-level survey) determined the need to effectively deepen the understanding on the required soft-skills of the CN role and also the contextual needs in the organisation. In local context, the creation of CN role is for part of the succession planning initiative to develop future leaders. As such, the CN role is permanent and it is defined as a frontline leader who serves as the eyes and ears of the day-to-day patient care operation by providing real-time clinical supervision and coaching to the team members.

Competencies and qualities of a Charge Nurse

Competency is the ability to demonstrate a set of knowledge, skills and attitudes (KSA) that enable the successful performance of activities within the defined scope of practice (Blanchard, & Thacker, 2007;Singapore Nursing Board, 2012).A qualitative study on CN competencies resulted in the creation of a well-accepted foundation fifty-four competencies, classified under 4 categories: 1) clinical/technical, 2) critical thinking, 3) organisational and 4) human relations competencies and provided a description of the 15 characteristics of an effective CN(Connelly et al, 2003). Taking these into consideration, a set of competencies (Table) is also determined for the CN based on the local roles and responsibilities.

Challenges/ stressors and Learning Needs of Charge Nurse

Research found moderate level of stress across cultures and suggested that a prerequisite educational programme, mandatory mentoring and to prepare and support the trainee CNs to cope with the perceived stress (Admi, & Eilon-Moshe, 2016).

A descriptive case report is the earliest available literature for this topic as it provided a descriptive account of the CN role and the challenges faced (Meredith, 1979). Many of these challenges still exist today. For example, a new CN needs to manage and direct co-workers who used to work with her side-by-side – the sudden change of role without any official introduction to the ground nurses may compromise the recognition and acceptance of the leader; the perceptions of sharing equal amount of workload when the CN assumes this role, but without taking patient case-load; unable to seek instant support from the immediate supervisor and waited until it reaches a critical level. Several studies (Admi & Moshe-Eilon, 2010; Sherman et al, 2011; Sherman et al, 2013) also studied the role-specific stress for CN, managing conflict is commonly identified factor and ranked as the top challenge. Evidences from the literature informed that the level of struggles and stress is positively related to the unpreparedness for the appointed position (McCallin, & Frankson, 2010; Connely et al, 2003; Platt, & Foster, 2008).

Table 1: Charge Nurse Competencies in a local context

A. Clinical Competencies	B. Leadership and Management Competencies	C. Communication Competencies
Responsibilities related to patient care and the technical issues, e.g. equipment, system usage, etc.	Abilities to lead the team, make effective decisions as well as problem solving regarding clinical and operational issues	Abilities to interact with team members effectively to accomplish quality patient care

1) Use Trendcare effectively to allocate workload
  a) Re-allocation of staff if there are any MCs
  b) Assist in deployment request
  c) Assign meal break and coverage
  d) Assign additional duties to maintain a safe and clean physical environment
	1) Manage time and prioritizes work appropriately	1) Ensure handover list is updated before the next shift

	2) Intra, inter-department/ discipline manpower issues	
	3) Identify staff performance issues/ needs for supervision	

2) Conduct initial unit-wide patient assessments	4) Problem solving and conflict management
	  a) Difficult patient and family
	  b) Conflict among team members
		2) Communicates significant operational and infrastructure issues

3) Act as a clinical resource in patient care	5) Communicate the unit's goals and objectives (KPIs) effectively	3) Escalate when appropriate

4) Initiate and supervise ATD
  a) Discharges (focus on complex cases)
    • Communicate with doctors / allied health for potential cases
    • Ensure discharge documentations are ready for D-1 cases
    • Communicate with patient's family during visiting hours
    • Supervise PFE
  b) Review pending admissions
  c) Pull transfers
	6) Provide leadership (support and guidance) to staff during shift
	7) Motivate staff to accomplish appointed duties
	8) Develop cooperative effort/ teamwork	

Source: Authors

These evidences corresponded to the LNA findings, which reflected from a different perspective on what our CNs' role and responsibilities are and what may be lacking in our new leaders. It is obvious that only knowing the role and responsibilities are not enough, but the 'why and how' of the role and responsibilities are important. Any educational programme must therefore include soft-skills such as critical thinking, human relation skills (including emotional intelligence - EQ) and problem solving. The aspect of including EQ is evident in

the recommendation to include emotional-self-management as a leadership competency to the CNC (McCallin, & Frankson, 2010).

The methods of delivery of a Charge Nurse Course

Tennant et al, (2002) advocated the use of a combination of on-the-job and off-the-job methods and opine that off-the-job training can be a useful initial step to widen the boundaries of the learning in order to facilitate the subsequent application of learnt KSA sand further develop skills and competencies in the real-work environment.

A study recommended the developmental experiences (educational programmes, developmental relationships, such as coaching and experiences with other CN) for developing required competencies (Connelly et at, 2003). In addition, online training is also supported as preferred learning mode for CNs due to the time limitations of nurses and with increased computer accessibility (Wojciechowsk et al, 2011). On the other hand, the importance and the benefits of Preceptorship for new CN orientation and advocate to invest time to allow adequate training and the use of dedicated preceptor to ensure necessary coverage of learning needs was studied (Berbarie, 2010).

A 16-week on-the-job-training (OJT) with experiential coaching model, whereby an experienced external consultant is engaged to coach 10 CNs concurrently was used(Johnson et al, 2010). However, the mentoring approach can be labour-intensive, costly and time-consuming, as well as also challenging to satisfy the demand for such a large-scale training in the local context.

Based on the above discussion, a blended approach is considered. The main limitation of the above approach is that the development of the course is purely based on the evidences of other contexts, but yet to consider from the perspectives of the unique contextual needs (the specific needs of the trainee and the organisation) and relevant teaching and learning theories.

3. Adopting the Kirkpatrick Modelto Enhance Effectiveness

According to the LNA findings in the local context, the features with a reasonable degree of control for each construct (reaction, learning, behaviour and results) are discussed and justified for the design and implementation phase.A holistic approach with a modified Kirkpatrick model(1960) is used from the perspectives of contextual requirements and various learning theories to arrive at a proposal for the CNC.

Reaction

Reaction in the model is defined as how well the trainees liked a programme Kirkpatrick, (1960) and are usually measured by post-course evaluation. Thus, being mindful of SSNs learning styles when deciding on the learning methods may enhance the reactions through participants' engagement. can lead to potential effectiveness of the course. Considerations based on adult learning theory (Knowles, 1984) will thus include SSNs readiness to learn, prerequisite knowledge (KSAs) the trainees possess and their belief that they can learn Blanchard, & Thacker, (2007) and enhancement such as disseminating the pre-requisite instructions clearly with support from the respective unit nurse leader scan help to emphasise the importance of timely completion and enhance readiness of learner.

Modes of learning and diverse preferred individual learning styles are also considered. Noting the differences in individual's preferred learning styles which is a multi-modal teaching strategy of using a variety of modes is encouraged to accommodate learners' diverse preferred learning styles.

Learning

Learning is a complex concept, "a relatively permanent change in cognition resulting from learning experience and directly influencing behaviour" (Blanchard & Thacker, 2007 p.78). Hence, for the CNC, the expected learning outcome is that learners will be able to perform

the CN role competently and confidently. In Engaging the Kirkpatrick model, learning and behaviour will be discussed.

Learning in the Kirkpatrick model (1960) is measured by how well the learning objectives are achieved, with reference to the required KSAs identified from the LNA (Blanchard, & Thacker, 2007). The term of zone of proximal development (ZPD) coined argued that individual development can advance through focusing at the ZPD (Vygotsky, 1978); whereby trainee CNs cannot achieve the level of learning on their own but are able to achieve with guidance from educational support or more skilled peers (Silverman, 2011). The use of ZPD can help to decide what should be in the flipped classroom e-learning and what are to be included in other forms of educational activities (Figure 1).

Figure 1: Zone of proximal development for Charge Nurse Course

With this, a hybrid or blended learning approach is ideal to combine e-learning and face-to-face interactive workshop, which can capitalise the strength of both methods and encouraging active learning and self-direct learning (SDL) Noe et al, (2012), which allows learner to self-manage and monitor learning using preferred learning styles and at a preferred pace. In return, this will foster lifelong learning and motivate nurses to stay competent and up-to-date (Dixon, 1991). Also, as patient assignment is managed through a workload management system – TrendCare in the local context, a 1-hour scenario-based simulation session in the computer laboratory using the simulated TrendCare environment allows trainees to make decisions on workload allocation. Their solutions are appraised with respective rationales and limitations, allowing for future improvements.

Behaviour

Kirkpatrick (1960) illustrated an example that the learning and practice can be misaligned, where the learner demonstrated good knowledge and skills during class, but practise different principles at work. Thus, the importance of focusing on the transfer of learning TOL) to the performance/behaviour on-the-job. Behaviour refers to the ability to transfer the learnt KSAs to the job that learners are required to perform, also known as the transfer of learning.

The ultimate aim of the CNC is that trainees are able to perform the role and responsibilities competently and confidently. As such, the focus is on facilitation of TOL to the CN's performance. As such, OJT with competency assessments and coaching/mentoring from supervisor should be considered. This can serve the purpose of linking theory to practice and continued learning on the learnt KSA in various context, which can lead to consolidation and internalisation of knowledge (Weingartner, & Parker, 1984).A 3-month period is thus proposed based on careful calculation of working hours of trainee and evidences from literature (Arthur et al, 2003; Johnson et al, 2010).As the learning outcomes target at the eventual on-the-job performance, it is important to look at factors affecting human performance: motivation, KSA and environment(Blanchard & Thacker, 2007).

Motivation

Clearly defining the roles and responsibilities could help Trainee CN make a more accurate judgement. During such developmental process, self-generated feedback through a self-monitoring process plays crucial role in formulating efficacy perceptions that interact with goal setting, leading to high self-efficacy and high performance (Blanchard, & Thacker, 2007;Bandura,&Cervone,1983).With these evidences, the assessment methods for the CNC can be further enhanced by adding monthly periodical formative evaluations with self-assessment, using a set of simple rating scale that is modified and adopted from(Northern Ireland Practice and Education Council for Nursing and Midwifery, 2010).

In a nutshell, the CNC combines the use of sub-goals, encouraging self-monitoring/self-evaluation, coaching and feedback during the OJT to enhance the TOL. The OJT could provide opportunities for enactive mastery and modelling for better performance, whereas, the support and guidance during the OJT is crucial to foster successful learning experiences, in turn could improve self-efficacy of the CN and enhanced self-efficacy, leading to long-term benefit for succession planning.

KSA – tools to link theory to practice

In order to link the learning and behaviour, an initial self-development plan will be drafted by the trainee CN as part of reflection work during the pre-course e-learning. Within the first week after the course, the trainee should schedule the first meeting with the preceptor, with the self-development plan to be used as a guide for discussion. Through clarifications and feedback, the assigned preceptor will gain a sense of how the trainee intended to put in the efforts into practice. The strategies to use individual development plan and a combination of self-assessment and "gain outside perspectives" also recommended by (McCallin et al, 2009, p. 42).

Learning action plan is another powerful tool for encouraging transfer and used by practitioners for CN training (Blanchard, & Thacker, 2007; Jasper et al, 2010). The action plan is also adapted into the CN OJT, which can be used anytime when learning actions are discussed during the progress meeting. A written reflection is required at the 2nd progress review meeting. Such process (Figure 2) has engaged multiple loops of the development planning process: "Self-assessment→reality check→goal setting→ action planning" to identify and meet the trainee's development needs(Noe et al, 2012, p. 399).

Timeline	Initial meeting	1st progress meeting	2nd progress meeting	3rd progress meeting
	Within 1st Week	End of 1st month	End of 2nd month	End of 3rd month
Tools & activities	Self-development plan Discussion & feedback	Self-assessment Discussion & feedback Learning action plan	Self-assessment Reflective journal Discussion & feedback Learning action plan	Self-assessment Discussion & feedback Learning action plan

Self-assessment → reality check →goal setting → action planning

Multiple loops of development planning process

Figure 2: Structured meetings during preceptorship for OJT

Building a supportive environment with preceptorship

An environment with a positive climate for transfer is especially important for on-the-job performance. Experts suggested the need for tracking and monitoring system when assigning developmental assignment to CNs and link it to performance evaluation (McCallin et al, 2009; Bolton &Roy, 2004). The supervisors of the unit are ultimately responsible to the unit productivity and play a unique role in setting the tone of the environment culture and trainees' perceived supportiveness (Orpen, 1999;] Noe& Wilk, 1993). Assigning trainees back to respective units for the follow-up OJT does not only stimulate the ownership of supervisors' responsibility in staff development, but also provides an opportunity to link the

developmental assignment to their performance evaluation, which could in turn affect their motivation in performance.

Organisation

Organisational results are measured on 'changes in the bottom line related to the reason for training' (Blanchard, & Thacker, 2007, p. 343). In this case, it can be measured by teamwork, job satisfactions (CN and other team members) and productivity after the training and compared to baseline findings gathered from LNA. Another additional measurement from succession planning perspective is the number of promotions to the higher level. The following organisational factors should be considered to ensure positive outcomes:

Streamline the system issues

Many issues identified from LNA required attention at the organisaitonal level. Some examples are the CN role confusion, team conflicts and lack of support and feedback system. These issues must be considered in the course development and gain support from top management.

Succession planning

Coaching and mentoring is a deliberate choice for succession planning Bolton and Roy (2004), which aligns well with the approach that supervisors will be appointed as preceptor to coach trainee CN during their OJT performance. The benefit of such approach goes beyond the programme level and extends to professional development and succession planning at an organisation level.

The organisational climate

The Supervisor alone do not make up an organisation climate; the Nurse Educator also needs to partner other stakeholders and top management to formalise and establish the new leadership role by incorporating it into policies and existing development system Tennant et al, 2002; Blanchard, & Thacker, 2007; Bolton and Roy, 2004). As part of shared governance initiatives to promote nursing professional growth, all nurses at the hospital mandatorily maintain a professional portfolio by filing the evidence of professional growth and stimulate self-development awareness. With this practice, each self-assessment performed, reflective journal and completed post course action plan are filed to the professional portfolio, with new evidences added for continuous growth and development.

Organisational constraints

Organisational constraints should be considered to create an effective course that is feasible for implementation. Manpower crunch and cost-effectiveness are the two major issues identified. Sending the SSNs for training have a significant impact on available resources for rostering and may threaten the safe manpower level in the unit. A double-pronged approach is proposed to beat the implications on training caused by manpower crunch. On one hand, the hybrid e-learning/m-learning can indirectly free-up the time required for classroom session; On the other hand, the nomination process can be streamlined by allocating training quota to each unit to reduce manpower demand and post course coaching load.

Proposed Course Structure

Through the extensive literature review and enhancement instilled along the way, the course has morphed into a structure with pre-course e-learning and 1-day workshop, then followed by a formal 3-month preceptorship. The course structure and contents are shown in Figure 3.

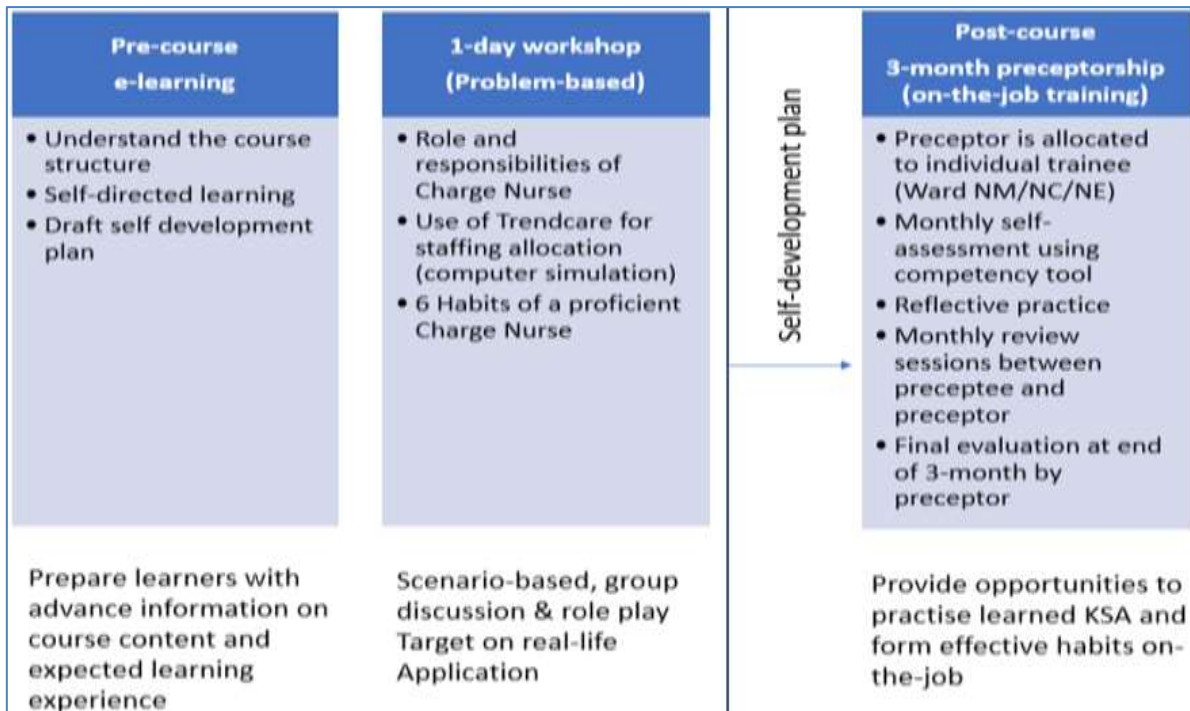| Pre-course e-learning	1-day workshop (Problem-based)	Self-development plan	Post-course 3-month preceptorship (on-the-job training)
• Understand the course structure • Self-directed learning • Draft self development plan	• Role and responsibilities of Charge Nurse • Use of Trendcare for staffing allocation (computer simulation) • 6 Habits of a proficient Charge Nurse		• Preceptor is allocated to individual trainee (Ward NM/NC/NE) • Monthly self-assessment using competency tool • Reflective practice • Monthly review sessions between preceptee and preceptor • Final evaluation at end of 3-month by preceptor
Prepare learners with advance information on course content and expected learning experience	Scenario-based, group discussion & role play Target on real-life Application		Provide opportunities to practise learned KSA and form effective habits on-the-job

Figure 3: Course structure and contents

The 3-month preceptorship is a formalised one-to-one short-term relationship, which allows the preceptor to assist the precept to achieve competencies and successfully adjust and perform the new role (Canadian Nurses Association, 2004). The structure of the preceptorship and responsibilities of preceptor are illustrated in Figure 2 and Figure 3. Researchers support the involvement of supervisors before, during and after training could effectively facilitate transfer (Lancaster et al, 2013).

Triangulation of Proposed Course

The goal of the triangulation is to thoroughly cross-examine the proposed methods of delivery, rationales and contextual considerations (Table 3) against the outcome evaluation based on the Kirkpatrick model (1960). With these, new perspectives and the contextual needs are considered and new strategies are added to enhance the positive transfer to the job, which can later be evident from the trainees' performance on-the-job.

4. Discussion and Conclusion

The creation of the CN role provided developmental assignments for future leaders. The preparation and on-the-job support for such new leadership role is crucial. Through the literature review, the aim to establish the best approaches and pedagogies for the development of an effective CNC is achieved.

Through a comparison and contrast exercise, the contextual similarities and differences have been identified. Cross-referencing these against the LNA, the roles and responsibilities of the CN in the local context are clearly defined. A list of competencies with descriptive characteristics of a proficient CN is delineated, which can serve as an important guide for the new CNs. The literature review furbished the analysis and design phases and generated strategies and action plans for implementation. Finalising this is not straight forward, and this therefore required the educator to cross-check different perspectives.

Table 1: The considerations for triangulation

Constructs	Considerations on design	Strategies
Reaction	Relevance of contents	Problem-based, case-based from real-life situations
	Effective teaching methodologies	Group discussion, role plays
		Pre-course e-learning
	Facilities, tools, trainer's teaching skills, etc.	Drafting self development plan
Learning	Learning needs analysis	Problem-based, case-based
	Define learning objectives	Focus on transfer of learning
	Effective teaching methodologies	Problem-based, case-based
		Group discussion, role play, e-learning, etc.
Behaviour	Effective teaching methodologies	Problem-based, case-based
		Reflective practice
	Transfer of learning (performance)	Use of self-development plan
	Training methods	On-the-job training and preceptorship
		Competence assessment (self- and preceptor)
Organisation	Align to strategic goal – succession planning	Preceptor for OJT coaching
	Top management support	Form clear policies and guidelines
	Cost-effectiveness	Pre-course e-learning

The final proposal incorporated multiple theories into practice, including blended learning (e-learning/mobile learning and computer-based simulation, experiential learning/OJT, etc.) and a combination of formal training and structured OJT training. The literature review has led to an attempt to adapt the Kirkpatrick model to consider contextual needs from all levels. The answers to an effective CNC lie in a balance of relevant theories, research evidences and contextual focus.

Theoretical and Practical Implications

The lessons learnt from the literature review and the eventual evolvement of the programme are many and is important to keep an open mind when creating a new programme. The literature review provided conceptual knowledge and global empirical evidences, which broadened the view of the educator and enhanced the subject knowledge. However, the contextual needs, especially the similarities and differences identified by comparison during the literature review process, is extremely critical to justify for the appropriateness of the pedagogies and methods of delivery.

Steps have been taken to set up a formal structure to strengthen the support to CN and facilitate TOL. Building on the existing practice and resources that could facilitate targeted learning and development can reduce the amount of changes and stress that are brought in by the changes to enhance buying-in by the stakeholders. Also, the specific needs of the learners and the organisation generated a variety of aims for the programme; different aims led to different teaching methods or a combination of methods.

Putting effort in building the required leadership KSA, as it has always been the traditional focus, to improve the new leaders' self-efficacy, has long-term benefits. Lastly, grooming future leaders is a co-responsibility and partnership between the Nurse Educator, who is responsible for the creation, and other nurse leaders, including top management.

Limitation and Further Research

The design of the course derived from the literature evidences and theoretical analysis of the contextual needs. Theoretically, it is the best suitable approach at the current phase and would require follow-ups and further corroboration with stakeholders. Further research can be done to implement the proposed CNC and test the effectiveness of the course post implementation.

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