A Model to Facilitate Authentic Learning in Nursing Education

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Abstract

Purpose: The purpose of this article was to describe a process followed in developing and evaluating a model to facilitate authentic learning (AL) in nursing education.

Method: A qualitative and theory generative research designs were used to develop the model. The four steps of theory generative research design namely concept analysis, construction of conceptual relations, the description of a model and the description of the guidelines for operationalisation were employed. The model was then developed and evaluated.

Discussion: A model development was done based on the following structure: (1) an overview of the model; (2) the purpose of the model; and (3) the structure of the model, which further includes the following: (3.1) the assumptions of the model, (3.2) the concept definitions, (3.3) the relational statements, and (3.4) the nature of the structure; as well as (4) the process description. A schematic presentation, which depicts the six elements of practice theory namely the context, agent, recipient, dynamic, process and procedure, and terminus or outcome of AL in nursing education was shown.

Conclusion: The described model is a framework that can be used to guide nurse educators in educating, training and producing a 21st century graduate who has higher order thinking skills, make astute clinical reasoning, judgment and rational decisions therefore will be able to deliver comprehensive, holistic care in line with the dynamic, highly-demanding interdisciplinary global healthcare system.

Keywords: authentic learning (AL), facilitate, model, nursing education

1. Introduction

Nursing education has been requested for decades to produce 21st century professional nurses who are lifelong learners with pertinent knowledge, skills, values and attitude to deal with complex global health issues and real-life patient problems that require multiple solutions (Council on Higher Education [CHE], 1997, January; CHE, 2014, January; Department of Health [DoH], 2006; Ministry of Education, 2001; South African Nursing Council [SANC], 1992a; Sustainable Developmental Goals [SDGs] in Pisano, Lange, Berger, & Hametner, 2015). This is a tall order for nurse educators who seldom engage learners in innovative pedagogical and assessment strategies to achieve this request. Some nurse educators are still reliant on teacher-centered approaches such as traditional lecturing and direct instruction without using alternatives that are indispensable in a higher educational setting that is rapidly and increasingly transforming (French & Kennedy, 2017).

Within teacher-centered approaches learners are deemed recipients and consumers of information rather than discoverers and constructors of knowledge. They are given prescriptive assignments, provided with structured clinical engagements, directed to prescribed textbooks as well as subjected to pen and paper summative assessments (Ndawo, 2017). However such teacher-centered approaches do not adequately equip learners with critical, reflective, creative and innovative thinking, rational decision making, astute clinical judgment and reasoning, teamwork and communication skills. Of importance is that these indispensable higher order thinking skills are ones that learners have most challenges obtaining on their own (Chametzky, 2014).

In authentic learning (AL), a learner-centered approach, learners co-construct their own knowledge through being engaged in activities that require the use of higher order thinking skills used by experts in their daily working lives (Brown & Mevs, 2012). These skills are relevant to the real world and can be adapted to new learning and working situations thus are required for the development of 21st century graduates to solve real world, complex problems

(Kivunja, 2015a; 2015b). The challenge with AL as a concept is that it is abstract and ambiguous. Such ambiguity and lack of clarity challenge nurse educators as they partially adopt facilitation of AL methods while simultaneously subjecting learners to the traditional lecture method and pen and paper examination, which do not develop learners' higher order thinking skills (Ndawo, 2017). While AL is a widely known concept the researcher could not find any evidence of a model to facilitate it in nursing education. This introduction gave rise to the following research question: *How can a model to facilitate AL in nursing education be developed and evaluated?*

To empower nurse educators in producing a 21st century graduate who can adapt to the constant changes of the unpredictable, challenging and ever-changing healthcare environment a model to facilitate AL in nursing education needed to be developed. The original contribution to the existing knowledge of AL is the developed model to facilitate AL in nursing education.

1.1 Problem Statement

There is widely available literature, conceptualised AL frameworks and documented positive outcomes of AL (Amory, 2014; Chabeli, 2014; Herrington, Parker, & Boase-Jelinek, 2014; Yeen-Ju, Mai, Kian, Jing, Wen, & Haw, 2014), but in spite of these nurse educators seldom engage learners in this learner-centered approach at the start of the training (Ndawo, 2015). The instructivistic, decontextualised and abstract teaching that learners are subjected to forces them to acquire superficial, atomistic learning. It ignores meaningful integration of theory and practice thus making it difficult for learners to retrieve and use the knowledge when it is needed in real-life contexts. Such teaching provides knowledge that is solid, rigid and contextualised in the classroom resulting in little opportunities for developing learners' higher order thinking skills (Alotebi, Giraldo-García, & Roy, 2014; Jaleniauskienė, 2016). Through development of a model and description of guidelines to operationalise a model, nurse educators will be assisted and empowered to fully adopt and effectively facilitate AL in nursing education.

1.2 Research Purpose

The purpose of this article is to describe the process followed in developing and evaluating a model to facilitate AL in nursing education.

1.3 Research Objective

The research objective was to develop and evaluate a model that can be used by nurse educators as a framework to facilitate AL in nursing education.

1.4 Definition of Key Concepts

The key concepts namely the model, facilitation, authentic learning and nursing education were defined.

1.4.1 Model

"A model is a symbolic representation of an empiric experience in the form of words, pictorial or graphic diagrams" (Chinn & Kramer, 2011). In this article, a model is a schematic presentation that is a framework to empower nurse educators in the successful facilitation of AL in nursing education.

1.4.2 Facilitation

Facilitation is an act of creating an enabling, non-threatening environment that is both challenging and relevant to real-life learning (Hughes & Quinn, 2013). In this study, facilitation refers to the process by which the learner is enabled to engage in the AL process by a nurse educator.

1.4.3 Authentic Learning (AL)

"Authentic learning (AL) is a pedagogical approach that allows learners to discover, explore, discuss and meaningfully create meaning within real contexts that involve real world problems and that are relevant and of interest to the learner" (Christmas, 2014).

1.4.4 Nursing Education

Nursing education is a process through which learner nurses learn the art and science of nursing that enables them to provide care for people in need. Such learning is through guidance and support that is provided by nurse educators (Bruce & Klopper, 2017).

2. Research Method

A qualitative and theory generation research designs were used in the development of a model. A qualitative research design was chosen as an overarching design because of its logical, coherent and subjective nature essential in describing the phenomenon at hand (Gray, Grove, & Sutherland, 2017). Its flexible, evolving and vibrant nature allowed the researcher to discover the conceptual meaning of AL in stage 1a, which formed basis for

knowledge in this study (Corbin & Strauss, 2015; Holloway & Wheeler, 2013). It was also employed during stage 1b of the study which entailed the empirical stage that allowed the researcher to explore the 'depth, richness and complexity inherent' in the perceptions of learner nurses and nurse educators on how AL can be facilitated in nursing education (Gray et al., 2017).

Theory generation research design was used to answer the aforementioned research question of how a model to facilitate AL in nursing education can be developed and evaluated. A model is a graphical representation of a theory (Walker & Avant, 2011). However both the model and the theory's conceptual maps are useful in providing clarity and elaboration as well as succinctly conveying the relationships between and among their concepts (Polit & Beck, 2018). Theory generation research design steps namely concept analysis, construction of conceptual relations, the description of a model and the description of the guidelines for operationalisation were followed as described by Chinn and Kramer (2015) and Walker and Avant (2011). Therefore, following the rigorous processes of this research design, the model to facilitate AL in nursing education was developed in four steps.

Step 1a: Concept analysis: Literature exploration

In step 1a, the concept analysis of AL was done in accordance with Walker and Avant's (2011) method. The Walker and Avant's method was used because it is commonly used, classical and traditional (Thompson, 2018). The identified defining attributes that were the results of concept analysis provided questions that were used to collect data in the empirical step 1b. The results of the concept analysis did not form part of this article therefore were omitted.

Step 1b: Concept analysis: Empirical

The empirical step explored the learners' and nurse educators' perceptions on how AL can be facilitated in nursing education using the identified defining attributes of AL through five agenda focus group interviews with the learners and 12 semi-structured, individual interviews with nurse educators until data saturation (Polit & Beck, 2018). Purposive sampling method was most suitable as it enabled acquisition of rich data regarding participants' perceptions on how AL can be facilitated in nursing education (Gray et al., 2017). Forty-eight (n = 48) third- and fourth-year learner nurses were purposively sampled to participate because of their seniority within the Baccalaureus Curationis (BCur) degree programme, which provided them with insight and understanding of most of the teaching strategies used in nursing education (see Table 1 hereunder). Twelve (n = 12) nurse educators were purposively sampled because of their insight and understanding in the facilitation of learning in learner nurses (see Table 2 hereunder). The agenda interview question was: *How can AL be facilitated using (the defining attributes obtained in step 1a)?* Facilitative communication clarification techniques such as questioning, probing, active listening, clarifying and summarising were used for comprehensive data exploration and recording of verbal communication dynamics during the interviews (Murphy & Dillon, 2015).

Collected data were analysed manually and independently by the researcher and independent coder using Miles, Huberman and Saldaña's (2014) matrix-building method of data analysis, which included the process of reducing data, displaying data in matrices and drawing and verifying conclusions. Measures to ensure trustworthiness were employed by means of Lincoln and Guba's (1985) principles of credibility, transferability, dependability and confirmability and Guba and Lincoln's principle of authenticity (in Polit & Beck, 2018). Dhai and McQuoid-Mason's (2011) four ethical principles of autonomy, beneficence, non-maleficence and justice were considered to ensure that the participants' rights were respected and safeguarded. All participants volunteered and willingly consented to participate in the study. The researcher was a facilitator for the learners in their second year of study, in the first semester and worked with the nurse educators as colleagues.

Table 1. The sample: learners' demographic information

Focus group (FG)	Year of study	Number of participants (N = 48)	Race	Gender	Age	Duration of each interview
FG—1	Third-year	10 (N = 10)	African = 7; White = 1; Asian = 2	Female = 6; Male = 4	21-25 years	112 minutes
FG—2	Fourth-year	10 (N = 10)	African = 8; White = 2	Female = 8; Male = 2	21-29 years	115 minutes
FG—3	Third-year	10 (N = 10)	African = 10	Female = 9; Male = 1	20-23 years	106 minutes
FG—4	Third-year	Eight (N = 8)	African = 8	Female = 6; Male = 2	22-23 years	95 minutes
FG—5	Fourth-year	10 (N = 10)	African = 8; White = 2	Female = 9; Male = 1	21-27 years	120 minutes

Table 2. The sample: Nurse educators' demographic information

Number of participants	Teaching experience	Highest qualification	Race	Gender	Age	Level of appointment
12 (N = 12)	3-12 years	Master's = 12; Doctoral studies = 6	African = 8; White = 2; Asian = 1; Coloured = 1	Female = 10; Male = 2	39-63 years	Lecturer = 4; Senior lecturer = 8

Step 2: Construction of Conceptual Relations

Step 2 entailed conceptualisation of the findings of step 1 within the six elements of the practice theory as described by Dickoff, James and Wiedenbach (1968a) namely the context, agent, recipient, dynamic, process and procedure, and terminus or outcome. Furthermore, the findings were conceptualised within the relevant, existing literature. After conceptualisation of each element, concluding statements were made using the reasoning strategies of analysis, synthesis, inductive and deductive reasoning, retroduction, inference and derivation. Conceptual relation statements that provided the basis for model development and evaluation in step 3 were also made.

Step 3: Description of a Model

The description of the model entails using the Chinn and Kramer's (2015) criteria of model development and evaluation, a step that is dealt with in this article. The in-depth description of the process of the development and evaluation of the model is made in point 3 that follows hereunder.

Step 4: Description of the Guidelines for Operationalisation

This step, which entails the description of guidelines for operationalisation of the model was not dealt with as this was not the focus of this article.

3. Discussion: Development and Evaluation of the Model

3.1 Development of the Model to Facilitate AL in Nursing Education

The model was developed in accordance with Chinn and Kramer's (2015) method of model development, which is based on the following structure: (3.1.1) an overview of the model; (3.1.2) the purpose of the model; and (3.1.3) the structure of the model, which further includes the following: (3.1.3.1) the assumptions of the model, (3.1.3.2) the concept definitions, (3.1.3.3) the relational statements, and (3.1.3.4) the nature of the structure; as well as (3.1.4) the process description. The nature of the structure and the process description are interrelated in that the process description is inherent in the nature of the structure of the model thus these two processes will be described together under a heading of 'The nature of the structure and the process description of the model'.

3.1.1 An Overview of the Model

An overview of the model will be described in relation to the schematic presentation (Figure 1), which depicts the context, agent, recipient, dynamic, process and procedure, and terminus or outcome (Dickoff et al., 1968a) of AL
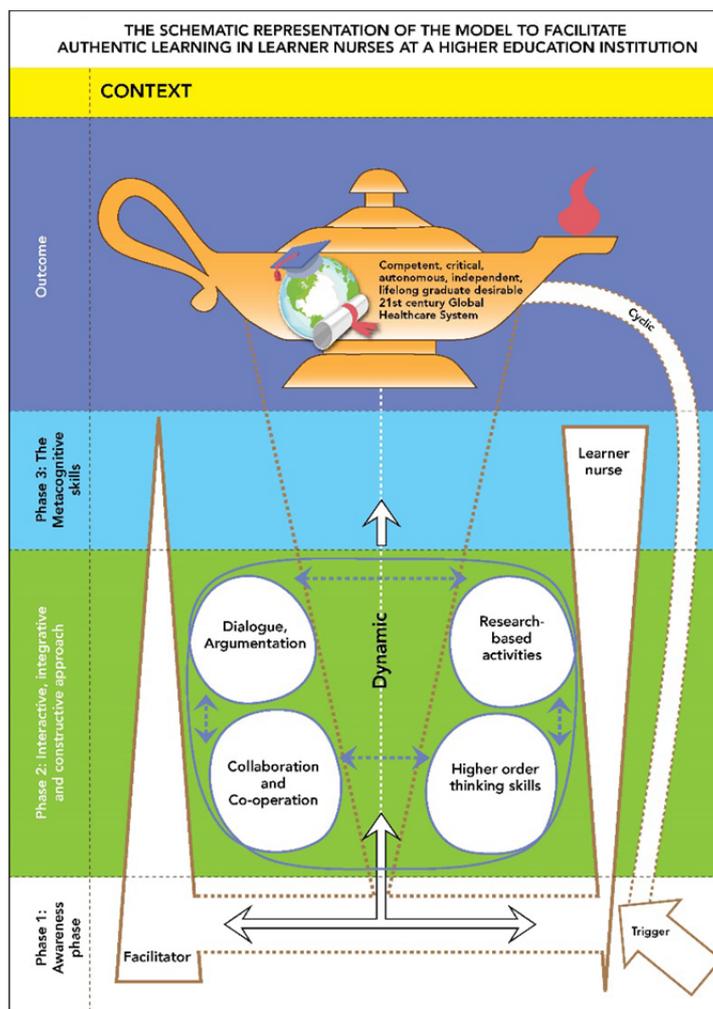
in nursing education.

Figure 1. Schematic Presentation of a Model to Facilitate AL in Nursing Education

3.1.2 The Purpose of the Model

The purpose of the model was to provide a framework to be employed by nurse educators in the facilitation of AL in nursing education by immersing learners in the three phases of AL that are developmental and progressive in nature.

3.1.3 The Structure of the Model

The structure of the model consists of the assumptions upon which the model is based, definitions of central concepts, relation statements and the nature of the structure (Chinn & Kramer, 2015).

3.1.3.1 The Assumptions of the Model

An assumption is a statement that is considered or believed to be true even though it is not scientifically tested (Gray et al., 2017). Hereunder are the researcher's assumptions related to context, person and dynamic.

❧ **The assumption related to the context**

The context of nursing education is an unpredictable, complex, challenging yet stimulating and thought-provoking environment that adapts and evolves at all times; it shapes and offers persons within it an AL experience that can be collaboratively shared (Ndawo, 2017).

❧ **The assumption related to a person**

A person includes a learner and a facilitator who is a unique, whole, biopsychosocial being that learns in

multidimensional ways and is capable of achieving their goals through constructing their own knowledge and unique experiences within an AL environment (Ndawo, 2017).

ଔ **The assumption related to the dynamic**

The meaningful, realistic, active engagement is a dynamic that is highly demanding and complex and its success depends on the abilities and affective dispositions of both the learner and the facilitator (Ndawo, 2017).

3.1.3.2 Definition of Central Concepts

The central concepts of the model were identified according to Dickoff et al.,'s (1968a) elements of the practice theory. Their description was done according to the rules of Copi, Cohen and McMahon's (2014) definition of a concept. The identified concepts central to the model are nursing education (context), the facilitator (agent), the learner (recipient), the meaningful, realistic, active engagement (dynamic), the three phases of AL as influenced by the cognitive and affective thinking domains (process and procedure) and AL (outcome).

a) Nursing Education (*context*)

Nursing education is an unpredictable, challenging, ever-changing yet stimulating and thought-provoking learning environment that is conducive to the facilitation of AL in learner nurses and takes place within various boundaries globally (Ndawo, 2017).

b) The Facilitator (*agent*)

The facilitator refers to a qualified nurse educator who is registered with the SANC, under Regulation 118 of 1987, as amended (SANC, 1987). Facilitators are characterised by critical thinking (and problem-solving), creativity (and innovation), communication and collaboration skills and facilitate AL in learners by establishing an environment that is conducive to meaningful, realistic and active engagement (Ndawo, 2017).

c) The Learner (*recipient*)

The learner refers to a person who is undertaking nursing studies leading to registration as a nurse (general, psychiatric and community) and midwife, according to SANC Regulation 425 of 1985, as amended (SANC, 1985). Learners are active participants in the AL process thus construct and develop their own deep knowledge, empowering skills, pertinent values and positive attitudes to practice competently, critically, autonomously and independently within a future healthcare environment (Ndawo, 2017).

d) The Meaningful, Realistic, Active Engagement (*dynamic*)

The dynamic refers to a meaningful, realistic, active engagement that is a driving force of the real-life interactive, integrative and constructive learning activities and without which the facilitation of AL in learners will not occur (Ndawo, 2017).

e) The Three Phases of AL (*process and procedure*)

The AL process takes place in three phases as follows:

Phase 1: Awareness of lack of knowledge

ଔ Awareness is the ability to reflect on one's own capabilities to effectively deal with an authentic situation at hand using existing knowledge and is triggered by ambiguity, uncertainty and cognitive dissonance (Ndawo, 2017).

Phase 2: Interactive, integrative and constructive approach to intentional, real-life meaningful learning

ର The interactive, integrative and constructive approach refers to a dynamic, reciprocal and collaborative process where, within an AL environment, learners exchange, integrate and apply their knowledge, skills, values and attitudes in pursuit of co-creating their own knowledge that has personal meaning (Ndawo, 2017).

Phase 3: The developed metacognitive skills

ର Metacognition refers to the knowledge, monitoring and regulation of one's own thinking processes and it involves self-conception, meta-learning, the ability to make rational decisions and solve ill-defined, complex, challenging, real world problems open to multiple perspectives (Ndawo, 2017).

f) AL (*outcome*)

"Authentic learning is a cyclic learning approach to intentional real-life meaningful learning influenced by a hierarchy of cognitive and affective thinking skills in real-life or virtual contexts. It is triggered by ambiguity, uncertainty and cognitive dissonance bringing about a state of awareness followed by engagement in interactive, integrative and constructive learning activities leading to the development of metacognitive skills resulting in a

competent, critical, autonomous, independent, lifelong graduate desirable for the 21st century global healthcare system" (Ndawo, 2017).

3.1.3.3 The Relational Statements

The relational statements were formulated through the use of reasoning strategies regarding the model to facilitate AL in nursing education as follows:

- ∞ The quality of the AL process depends on the interpersonal relationship and partnership that the facilitator has with the learners, significant individuals such as experts and the nursing education environment.

- ∞ The nursing education environment provides learners with human, material, financial, time and technological resources through which they must meaningfully, realistically and actively engage to learn. Furthermore, it also provides the facilitators with the same resources to guide and support the facilitation of AL in learners.

- ∞ The learner must meaningfully, realistically and actively engage with the context and respond positively to the contextual input, provide output and receive feedback from the environment to make meaning.

3.1.3.4 The Nature of the Structure and the Process Description of the Model

The schematic representation of the nature of the model is provided in Figure 1. All the six fundamental concepts namely the context, facilitator, learner nurse, dynamic, process and procedure and terminus or outcome and their related conceptual relationships are incorporated within this single structure. The concepts of the model are shown in different colours according to de Bono's (2016) six thinking hats.

(a) The Context (nursing education)

The yellow rectangular upper border depicts the context of nursing education, which is an unpredictable, challenging and dynamic learning environment conducive to the facilitation of AL. It occurs within the legal, ethical and professional boundaries at international, national, provincial and learning institutions' levels (Ndawo, 2017). The yellow colour symbolises the beneficial, positive, optimistic, warm and constructive nature of nursing education as an environment within which learners enthusiastically and collaboratively explore and engage in all the available real world opportunities to achieve their academic goals (de Bono, 2016).

(b) The Agent (facilitator)

The upright triangle depicts a facilitator who possesses the 4Cs "Super Skills" for the 21st century (Kivunja, 2015b), which were identified during step 1 of the study, the concept analysis. The broad base of the triangle in phase 1 of the process and procedure depicts the initial facilitation of AL in learners that is largely instructional and scaffolded. In phase 2, the facilitator decreasingly reduces scaffolding and vigorously supervises learners in AL activities to progressively develop them intellectually, hence the reduction in the triangle. In phase 3, the apex of the triangle is narrow, indicating the dominant use of mentoring and coaching by the facilitator (Ndawo, 2017).

(c) The Recipient (learner)

The inverted triangle depicts a learner who actively participates in the development of their own 4Cs "Super Skills" (Kivunja, 2015b), which were identified during concept analysis. The narrow portion of the triangle in phase 1 of the process and procedure depicts the paucity of the required knowledge, skills, values and attitudes to deal with an authentic task. Learners are facilitator-dependent and require scaffolding. In phase 2, the triangle is broader depicting learners' meaningful, realistic and active engagement in authentic tasks. The grit, intrinsic motivation, tolerance for and embracing of diversity, open-mindedness and emotional intelligence are, but, some of the positive attributes that afford leaners the vivacity to engage in authentic tasks. In phase 3, the triangle is broadest indicating learners' developed metacognitive skills to deal with authentic tasks (Ndawo, 2017).

(d) The Dynamic of AL

The funnel that terminates with a broad burning lamp that is positioned between the learner and the facilitator depicts the dynamic of AL, which is a meaningful, realistic, active engagement. It is the driving force, without which AL will not occur (Dickoff et al., 1968a). The lower, narrow part of the funnel is entrenched in phase 1 of the process and procedure and signifies minimal engagement of learners in authentic tasks. To guide learners, the facilitator uses action verbs such as *name, list, define, describe, summarise* and *translate* (Tabrizi & Rideout, 2017). Thus learners look for pure facts in the information without evaluation and critiquing of such information and that justifies the white colour of the funnel, adopting the colour and significance of this phase.

The widening of the diameter of the funnel in phase 2 signifies the degree and intensity of learners' engagement in the AL activities which is highly vigorous. These activities meaningfully integrate the use of technology which includes academic social networking (Facebook), knowledge/information aggregation (wikis) and virtual gaming

environments (second life) as well as the use of authentic assessments that mirror the AL strategies employed (Chametzky, 2014; Ventola, 2014). Moreover these activities facilitate the utilisation and further development of application, analysis, evaluation, valuing and organisation skills thus learners intentionally engage in them in pursuit of closing the knowledge gap (Tabrizi & Rideout, 2017). This portion of the funnel is within the green phase of the model, adopting the significance of this phase (de Bono, 2016).

The broadest part of the funnel indicates intellectual growth and maturity of the learner that is characterised by the developed metacognitive skills namely self-conception, meta-learning and ability to make rational decisions and solve authentic problems that are open to multiple perspectives. Learners now engage in authentic activities that are self-directed and require them to create, construct, reconstruct, infer, hypothesise, investigate and conceptualise. The acquired competencies are internalised for utilisation, application and integration in future practice (Tabrizi & Rideout, 2017). The colour is dark blue, which adopts the significance of the third phase of AL.

(e) The Process and Procedure of AL

The AL process occurs in three phases that are distinct yet highly interdependent. *Phase 1* depicts an awareness of lack of knowledge by learners, which is triggered by ambiguity, uncertainty and cognitive dissonance when they are faced with an authentic task (Ndawo, 2017). This trigger is depicted by an arrow pointing toward the narrow portion of the learner, which symbolises the paucity of existing knowledge needed to deal with the task. The learners' reflective questions such as *"What knowledge do I need to deal with this complex problem?"* that they ask themselves in an authentic situation assist them in realising their own knowledge gap. Their subsequent knowledge acquisition and understanding, which is Bloom's lower cognitive domain, is displayed by a positive affective domain of response and receptive attitude to the AL situation (Tabrizi & Rideout, 2017). Phase 1 is white, which symbolises the pure and very basic information with which the learner initially engages in an authentic task therefore forming the cognitive structure on which to build AL (Ausubel in Jain, 2014; de Bono, 2016).

Phase 2, depicts learners' vigorous engagement in interactive, integrative and constructive approach to intentional, real-life meaningful learning by participating in AL activities to construct their own knowledge (Ndawo, 2017). The green colour of this phase signifies learners' interaction and intentional employment of innovative, new and unique approaches to solve authentic tasks (de Bono, 2016). In this phase, learners reject the conventional stifling rules and norms thus use Bloom's application, critical analysis and evaluation, while genuinely considering pertinent values and their organising ability (Tabrizi & Rideout, 2017).

Phase 3 is characterised by the development of the learners' metacognitive skills such as (a) self-conception, (b) meta-learning, and (c) the ability of learners to make rational decisions and solve authentic problems that are open to multiple perspectives. Creativity, ingenuity and originality are used in pursuit of creating innovative, new and unique solutions to authentic problems (Muganga, 2015; Winterman & Malacinski, 2015). Its dark blue colour symbolises that learners are now able to manage and monitor their own intellectual thinking processes (de Bono, 2016). Their cumulated in-depth knowledge, empowering skills, pertinent values and positive attitudes are now used to create something new and are reflected and internalised as own for future practice (Tabrizi & Rideout, 2017).

The four interlinked circles in phase 2 that encircle the broader part of the funnel depict the procedure of AL. Through engagement in AL activities such as dialogue, argumentation, collaboration, co-operation and real world research, which require the use of higher-order thinking skills learners develop the 4Cs "Super Skills" for the 21st century (Kivunja, 2015b) and use technology as a cognitive tool (Gebre, 2018). The double-pointed arrows between the circles signify the flexibility with the use of these AL activities, meaning that the indicated logical sequence need not be followed in this manner. This means that one activity can be used on the novice level in one group and on the proficient level in another group of learners. Furthermore, the learner's intellectual development should be taken into consideration during assessment, planning, implementation and evaluation of the authentic activities and during the provision of consistent, timely, positive and constructive feedback.

(f) The Terminus or Outcome of AL

The AL process thus develops a competent, critical, autonomous, lifelong graduate desirable for the 21st century global healthcare system, an outcome of AL (Ndawo, 2017). The mortarboard, the globe and the scroll signify a global graduate and the broad burning lamp signifies the vivid, intense, holistic and fluid nature of nursing education. The background colour is light blue, which symbolises contentment, willpower, in-depth understanding, tranquillity and a drive to achieve one's own academic goals (de Bono, 2016). The unpredictable, challenging and ever-changing nature of the healthcare environment will always challenge persons who find themselves in an authentic situation in which they lack knowledge and skills to deal with. This will result in ambiguity, uncertainty

and cognitive dissonance thus the AL cycle will begin again, which is depicted by the descending mouth of the lamp that goes back and connects to the trigger point. The dotted lines between the concepts illustrate an interactive, back-and-forth movement relationship, whilst a solid line depicts a lack of interaction among aspects as well as a forward or backward movement (Ndawo, 2017).

3.2 Evaluation of the Model to Facilitate AL in Nursing Education

The developed model was evaluated and critiqued on the 22nd of January 2017 by a panel of 20 experts of whom 14 possessed doctoral qualifications, five were full professors and had experience in the supervision of model development of doctoral candidates. Firstly, a PowerPoint presentation of the model was done by the researcher to the panel who later critiqued it through a debate that ensued. The debate was to justify and substantiate the model's clarity, simplicity, generality, accessibility and importance in the facilitation of AL in nursing education (Chinn & Kramer, 2015). The experts' critical, indispensable and far-reaching input that was given through oral and written constructive feedback was taken into consideration and was effected which then assisted the researcher in better refining the model.

4. Limitations

The research design and method used in developing the model had contextual significance and therefore the findings may not be generalised but could be applicable to similar contexts. The relationship of the participants with the researcher was that of a facilitator who facilitated learning in learners in their second year of study and who worked with the nurse educators as colleagues which may be viewed as an unintentional coercion.

5. Recommendations

The recommendations are made with regard to nursing education, practice and research.

(a) In nursing education, the model to facilitate AL should be implemented creatively and innovatively in the undergraduate programmes to develop and nurture the clinical competence of the learners thereby improving nursing practice.

(b) The implementation of the model needs to be evaluated through nursing research and continuous critical reflective sessions with nurse educators and learners.

(c) In nursing research, it is recommended that the conceptual meaning of AL be explored further through an empirical approach. Hypotheses should be formulated and tested with respect to the relational statements among the fundamental concepts and other related concepts of AL.

6. Conclusion

This article described the process of developing a model to facilitate AL in nursing education and four steps as described by Chinn and Kramer (2011) were used. Step 1 dealt with the concept analysis through (a) exploration of literature as well as (b) exploration and description of learner nurses and nurse educators' perceptions on how AL can be facilitated in nursing education. Step 2 focused on constructing conceptual relation statements by conceptualising the findings obtained in step 1 using Dickoff et al.'s six element of practice theory and existing literature. These conceptual relation statement formed basis for the development of a model. Step 3 focused on the development and description of a model to facilitate AL in nursing education. Lastly, step 4 was meant to deal with the description of the guidelines for operationalisation of the model however the guidelines were not described as they did not form part of this article. It is therefore believed that the purpose of describing the process followed in developing and evaluating a model to facilitate AL in nursing education was accomplished.

Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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