

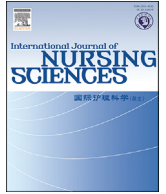
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Original Article

A model to facilitate transformative learning in nursing education

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ABSTRACT

Objective: Transformative learning is a learner-centered process of learning. Learners are actively engaged through critical reflection and discourse to question assumptions and expectations. The purpose of this article is to describe a model to facilitate transformative learning in nursing education.

Methods: A qualitative, exploratory, descriptive and contextual design for theory generation was selected in this study to describe a model to facilitate transformative learning in nursing education. Concept analysis of transformative learning was done in the first stage of the main study using Walker and Avant's eight step approach to clarify the conceptual identification and meaning. The results of concept analysis guided data collection in the second stage. Eleven individual agenda semi-structured interviews were conducted with nurse educators to explore and describe their perceptions regarding how transformative learning can be facilitated in nursing education. Matrix building approach was used to analyse the collected data. The third stage constituted the conceptualisation of findings from the second stage using relevant literature within the elements of practice theory. The fourth stage focused on the description and evaluation of a model to facilitate transformative learning in nursing education.

Findings: Four themes and nine sub-themes emerged and were conceptualised within the six elements of practice theory namely the context, agent, recipient, dynamic, process and procedure and outcome.

Conclusion: The relation statements provided the basis for model description. Reliable method was used to describe and evaluate the model. The refinement of the model by experts in model development and qualitative research was made.

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What is known?

- Several models on transformative learning have been described.
- The existing models lack clarity in the meaning of the concept 'transformative learning'.
- The facilitation of transformative learning in nursing education is unspecific.

What is new?

- The guidelines are an original contribution that will facilitate transformative learning of nursing students.
- The description of the model is in response to a call for learning that is interactive, integrative, learner-centered and

transformative by South African statutory bodies and education legislation.

1. Introduction and background

The purpose of this article is to describe a model to facilitate transformative learning in nursing education. The aim of a theory-generation design was to describe a theory. A theory is a systematic abstraction of reality that serve some purpose (Chinn & Kramer in Maibvise & Mavundla) [1].

The model is based on practice and the activity theory, which are philosophical and cross disciplinary frameworks used to study interlink between human practice and social processes [2,3].

The activity theory believes all human learning and development takes place in the form of activities. Learning is an active process of knowledge construction. The theory represents the underlying structure and dynamics of activity. The interplay between the facilitator and the nursing students in an activity that provides opportunities for learning and transformative change. Chinn and

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Kramer's guidelines [4] for theory description were used to describe the model.

The four stages of the study resulted in the development of the model. At the first stage, we described the concept analysis of transformative learning using [4,5] methods. The results of a concept analysis are as shown on a conceptual map in Fig. 1. Concept analysis revealed four activities namely, investigative, collaborative, and interactive and higher order thinking activities [6]. These activities provided direction for empirical stage to conduct data collection from nurse educators regarding how transformative learning can be facilitated in nursing education. Emerging themes and sub-themes were conceptualised within the six elements of [7] practice theory namely the context, agent, recipient, dynamic, process and procedure and outcome. Relation statements from conceptualisation were used to base the description of the model to facilitate transformative learning.

2. Method

A theory-generative, qualitative, exploratory, descriptive and contextual research design was used with the purpose of developing a theory. A theory is a methodical construct of reality that serves some purpose. The research method used included the population, sample and sampling method, data collection method, data analysis method and measures to ensure trustworthiness. Concept analysis of transformative learning [6] was done in the first stage of the main study using Walker and Avant's eight step approach to clarify the conceptual identification and meaning. The results of concept analysis guided data

collection in the second stage. A non-probability purposive sampling method was used to select the nurse educators from the three nursing education institutions in the province. The sample consisted of eleven nurse educator participants who were willing to take part in the study. The selection criteria included three to five years of experience in the facilitation of the diploma programme. Individual agenda semi-structured interviews were conducted with participants to explore and describe their perceptions regarding how transformative learning can be facilitated in nursing education. The structure of the interview allowed the interviewer to pose additional probes for clarity. Data collection continued until saturation of information was reached. Data was analyzed using a matrix building method by Miles, Huberman and Saldaña [8], the matrices allowed the researcher to organize the data according to the four questions from the concept analysis for easy viewing and permitted a holistic detailed data analysis. The results indicated four themes and nine related sub-themes. Lincoln and Guba's [9] strategies were used to establish trustworthiness. The strategies are credibility, transferability, dependability and conformability. Prolonged engagement, triangulation and member checking were used to achieve credibility.

Chinn and Kramer's [4] guidelines for theory description were used to describe the following components of the model: the purpose of the model, the structure of the model comprising which comprises the assumptions of the model, the concept definition, and the relation statements, classification of the concepts and overview of the model, the structure and the process of the model. The model was evaluated using critical reflection questions [4].

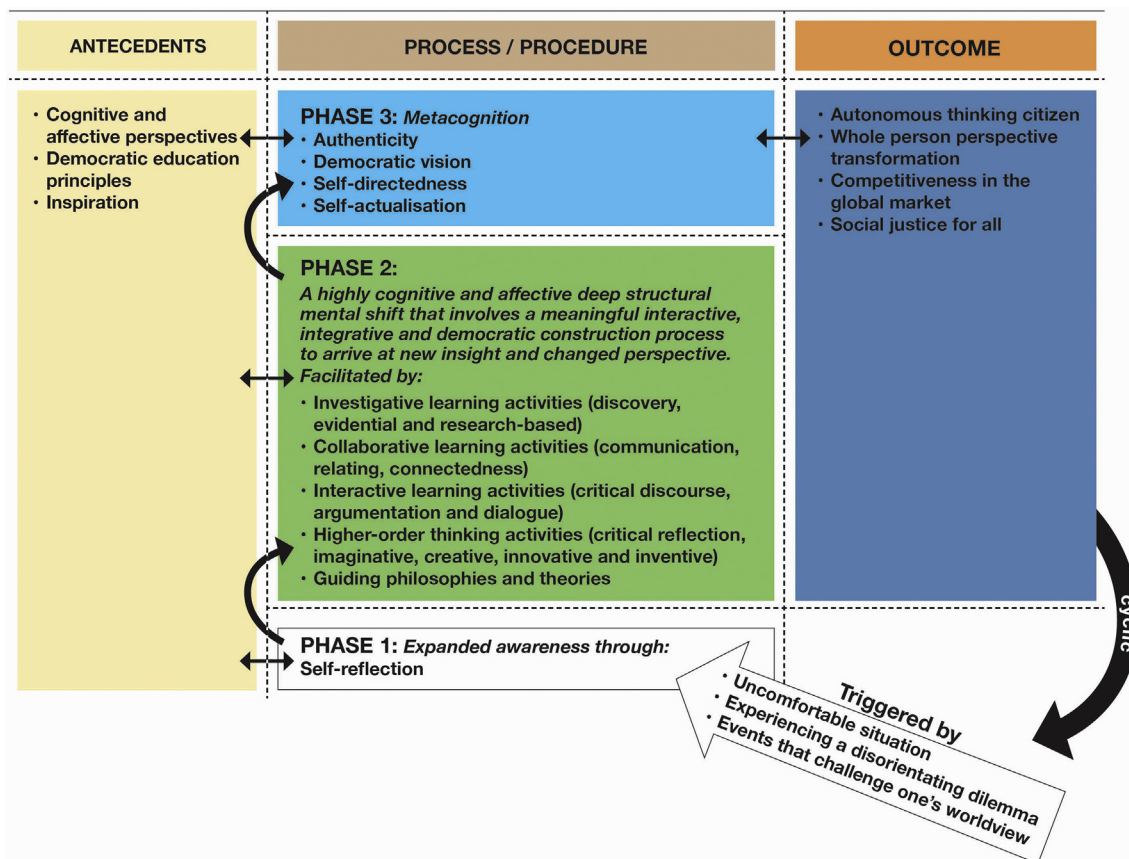


Fig. 1. Results of the concept analysis of transformative learning: a conceptual map.

3. Results and discussion

3.1. The purpose of the model

The purpose of the model is to serve as a framework for nurse educators in facilitating transformative learning of nursing students in nursing education. The model aims to develop foundational, practical and reflexive competence in nursing students to adapt to change in unforeseen circumstances through critical and reflective thinking.

3.2. The structure of the model

The components of the structure will be described below in accordance to Chinn & Kramer [4].

3.2.1. The assumptions of the model

The nursing education context, the facilitator, the nursing student and the dynamic are assumed to promote synergy for the success of transformative learning. The assumptions are as follows:

- Nursing education as a learning environment is diverse and promote meaningful engagement through learner-centered learning activities that are interactive and integrative to deepen understanding and bring about change.
- Active meaningful engagement and critical reflection as dynamic oblige the facilitator and the nursing students to assume greater responsibility for learning. Transformative learning relies on the quality of individual learner's decision to succeed.
- Strengthening the support and guidance by the facilitator will facilitate transformative thinking which is essential for learners to reflect upon thoughts.

3.2.2. The concept definition

Central concepts of the model were identified and defined in accordance to the five rules of concept definition by Copi, Cohen & McMahon [10]. The defined concepts of the model are as follows:

Nursing education is a diverse, increasingly complex and changing environment which is influenced by professional and political determinants, characterised by effective and efficient real-life learner-centered learning environment. It focuses on the education and training of nursing students to become competent, qualified nurse professionals.

The facilitator refers to a nurse educator registered as such with South African Nursing Council [11], is the agent of transformative learning who make the process easier by helping nursing students.

The nursing student is a student registered as such with South African Nursing Council, under R425, Regulation relating to the approval of and the minimum requirements for the education and training of a nurse [12] in a nursing programme leading to registration as a nurse (general, psychiatric and community) and midwifery. Personal characteristics such as curiosity, inspiration, commitment, open-mindedness and effective communication are necessary for the nursing student to engage in interactive learning.

According to Hu and Kuh in Trowler [13], **active meaningful engagement** refers to the quality of effort nursing students and facilitators purposefully devote to educational activities that contribute directly to desired outcomes. Engaging meaningfully and actively is more than involvement or participation, it requires the learners' feelings and commitment to make sense on the learning process. Paterson and Chapman in Ref. [14] describe **critical reflection** as a conscious and systematic approach to thinking about experiences with the aim of learning and changing behaviors. Critically reflective learners should be humble during

the process, be open, honest, and be willing to learn with understanding.

The process of transformative learning occurs in three phases. It is influenced and supported by cognitive and affective perspective, democratic education principles and inspiration as antecedents.

Phase 1: Expanded Awareness through Self-reflection: triggered by uncomfortable situation, disorientating dilemma and challenges in worldview.

- Expanded awareness is when the nursing students open their mind to actively seek more knowledge and understanding to deal with the confronting challenge [15]. The individual become understanding and connect with the world beyond their own to get a bigger picture of knowledge.
- Self-reflection is a process of understanding yourself better, by stepping back and ponder on personal beliefs and assumptions about learning.
- According to Ruslai and Salam [16], a trigger is typically a set of description of situation in need of explanation and resolution used to contextualize real-world scenarios.
- Uncomfortable situation, a disorientating dilemma, and challenges in one's worldview pertains to a confusing and challenging learning situation [17].
- Inspiration is the process of being mentally stimulated to engage in transformative learning activity, it is essentially a force or influence that encourages the nursing students [18].

Phase 2: Meaningful, interactive, integrative and democratic construction process.

- Meaningful learning refers to learning with a purpose, it allows nursing students to attach more meaning to the world around them and promote the construction of knowledge out of their experience, feelings and exchange with other learners [19].
- Interactive learning is a dynamic, real-world approach to learning which actively engages the nursing students in dialogue, argumentation and discussions with the transformative learning material to create meaning.
- Integrative learning is the process of learning by making connections, it brings together diverse disciplines in a comprehensive manner, enabling nursing students to develop a meaningful understanding of the complex associations within a topic.
- Democratic knowledge construction is the learning process that is based on a spirit of shared experience, equality, flexibility, responsibility and self-determination in order to form emancipated and responsible attitudes in learners.

Phase 3: Metacognition development (authenticity, democratic vision, self-directedness and self-actualization as attributes).

- Metacognition is a higher order thinking which involves active control over the cognitive processes engaged in learning and plays a critical role in successful learning.
- Authenticity refers to truthfulness of, attributes, commitments, sincerity, devotion, and intentions. Authentic nursing students demonstrate personal commitment, high levels of engagement, realistic intentions and are life-long learners.
- Democratic vision is the attitude of toleration and willingness to co-operate with others on terms of equality.
- Self-directedness refers to learners who acquire knowledge and skills by actively working in an independent and explorative way on transformative task, with minimal facilitator support.

- Self-actualization is the process of establishing oneself person, able to develop one's abilities and to understand oneself with the goal of becoming a self-actualized person.

The outcome of **transformative learning** is observable change on the nursing students. Following active engagement and critical reflection in interactive and democratic knowledge construction process, the nursing students become transformed, autonomous thinking citizens who make rational decisions and solve problems using acquired clinical reasoning skills based on evidence [20]. The transformed graduate develops new insight with perspective transformation. They become competitive in the global market demonstrating social justice in their practice [21].

3.2.3. Relation statements

The relation statements refer to the description, explanation or predictions of the nature of interactions between the concepts to form the substance of the theory in the model [4,5]. The relation statements of transformative learning model are integral part of the definitions of the key concepts.

3.3. Classification of the concepts and overview of the model

According to Dickoff et al.'s [7] concepts of the model are classified as follows: context, agent, recipient, dynamic, process/procedure and outcome/terminus. In the description of each concept, a figure will be displayed separately from the model figure for the purpose of explanation even though the process and structure are interrelated.

The context denotes the setting, conditions or circumstances in which the event of the transformative learning occurs. Nursing education as a context offer integration of theory and clinical practice. It delivers the knowledge and skills required to meet the academic and professional needs of nursing graduate. Nursing education is influenced by international, national and operational context within educational legislative framework as shown in Fig. 2 below.

The agent is the facilitator who exhibit transformative learning qualities to realise the goal of learning for change in nursing education. The recipient is the nursing student who receives learning that brings about change. The facilitator and the nursing student possess and share the characteristics that are well suited to create an environment conducive to transformative learning. Characteristics such as knowledge, experience and clinical competence; enabling skills and personal characteristics as displayed on Fig. 3 below.

The dynamic is a driving force to realise the success of transformative learning. In this study the dynamic is active meaningful engagement and critical reflection. The dynamic reinforces the

interaction and the facilitation process by involving the agent and the recipient to be committed and motivated to transformative learning. The dynamic is displayed on Fig. 4 below.

The process and procedure refer to the specific activities that are done to bring about the intended goal of transformative learning. The procedure involves meaningful interactive, integrative and democratic construction process. It is facilitated through learning activities which are investigative, collaborative, and interactive and involve the use of higher order thinking skills.

Terminus or outcome is the situation to be produced at the end of a process. The outcome of transformative learning is an autonomous thinking citizen, whole person perspective transformation with new insight that allows competitiveness in the global market and social justice for all. Transformative learning is cyclic in nature when the goal has not been reached. The outcome is displayed on Fig. 5 below.

3.4. The structure and the process of the model

Chinn and Kramer [4] describe the structure of the model as an overall form of the conceptual relationships within the theory. The process involves the steps that should be taken to achieve the desired outcome. The structure and the process of the model will be described concurrently with and in accordance to the schematic representation of the model to facilitate transformative learning on Fig. 6. Different colour according to de Bono's [22] six thinking hats will be explained.

3.4.1. Context

The yellow outside border portray the context of nursing education. Transformative learning occurs at macro, meso and micro context level. According to de Bono's in Ref. [22], the yellow colour symbolizes a sense of optimism and determination to succeed, the strengths and the opportunities, positivity, confidence and it brings sunshine. The nursing education context is a diverse, increasingly complex and changing environment which is influenced by professional and political determinants. It occurs within the legal, ethical and professional framework. It is the learning environment where the facilitator and the nursing students create a collaborative and enabling environment to facilitate transformative learning. It is the environment where they engage actively to construct knowledge, skills, attitudes and values through transformative learning activities.

3.4.2. Agent

The upright triangle depicts the facilitator/agent and the level of facilitation role within a conducive learning environment. The agent is represented by the white colour, which according to de Bono's in Ref. [22] signifies neutrality and objectivity, inspiration, understanding and precision in their thinking. The triangle is broad at the base in Phase 1 of transformative learning indicating the greater amount of knowledge and support from the facilitator to the nursing students at first year level. The facilitator possesses knowledge, experience and clinical competence to facilitate transformative learning. The apex of the triangle tapers towards Phase 3 indicating the decrease in scaffolding by the facilitator. Nursing students are given an opportunity to grow intellectually and take responsibility for their own learning.

3.4.3. Recipient

The inverted triangle represents the recipient being the nursing student in the process of knowledge construction. The recipient is represented by the white colour. The narrow base represents the need for nursing students to develop the limited domain-specific knowledge, experience and clinical competence. In Phase 1 the



Fig. 2. Context: Nursing education.

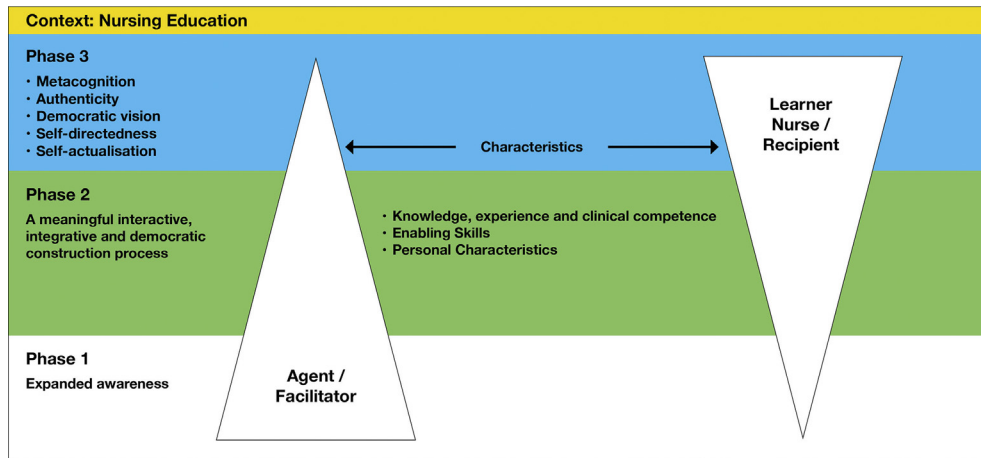


Fig. 3. Agent/facilitator and recipient/learner nurse.

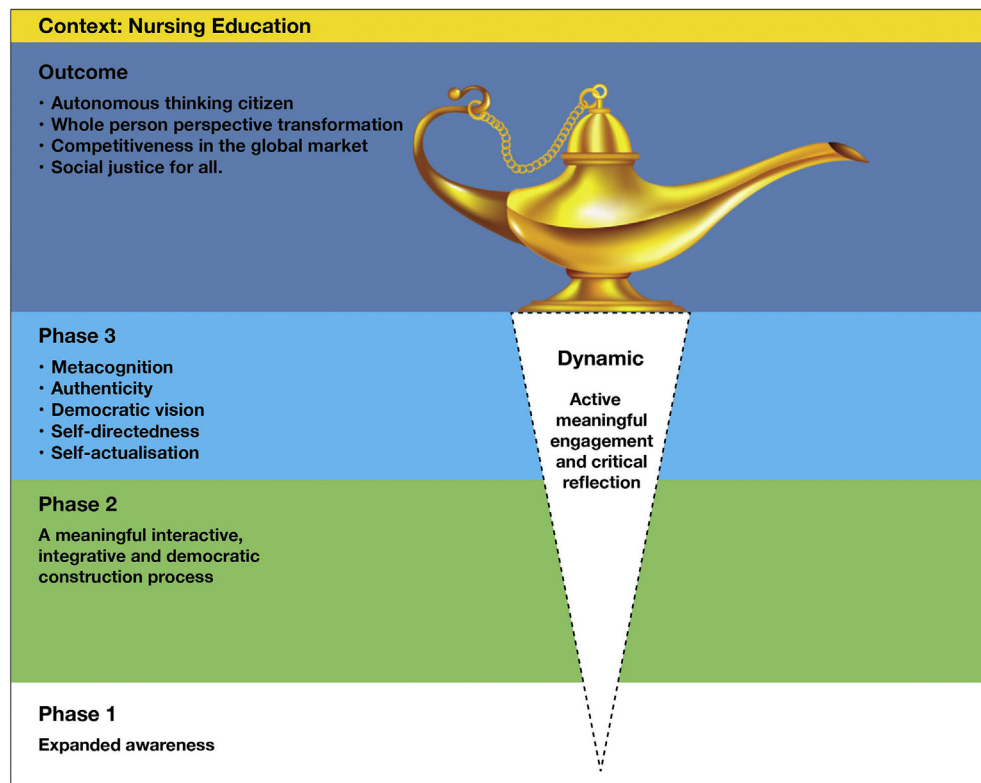


Fig. 4. The dynamic: Active Meaningful Engagement and Critical Reflection.

nursing students are depended on the support and assistance of the facilitator and the multi-disciplinary experts for knowledge and professional growth. In Phase 2 the inverted triangle begins to widen as the nursing students begin to actively and meaningfully engage in transformative learning activities with minimal support. In Phase 3 the inverted triangle is the broadest as learners demonstrate cognitive and affective maturity as they have developed metacognitive skills. They are self-directed and able to consolidate information and experiences to use in critical thinking, solve complex problems and make decisions in their worldview. The nursing students can practice independently and autonomously because of having acquired and developed lifelong working skills.

3.4.4. Dynamic

The dynamic of transformative learning which is active meaningful engagement and critical reflection drives the process. The dynamic is represented by the funnel shaped inverted triangle with the broken lines around which indicates interaction between the facilitator and the nursing students. The dynamic is reflected in white colour, which signifies information, facts, inspiration and depth of knowledge as nursing students' intellectual growth progresses, de Bono's in Ref. [22].

Meaningful engagement and critical reflection start from Phase 1 through and terminates below the broad burning lamp at the outcome. The dynamic in Phase 1 is narrow because active meaningful engagement and critical reflection are minimal in a novice,

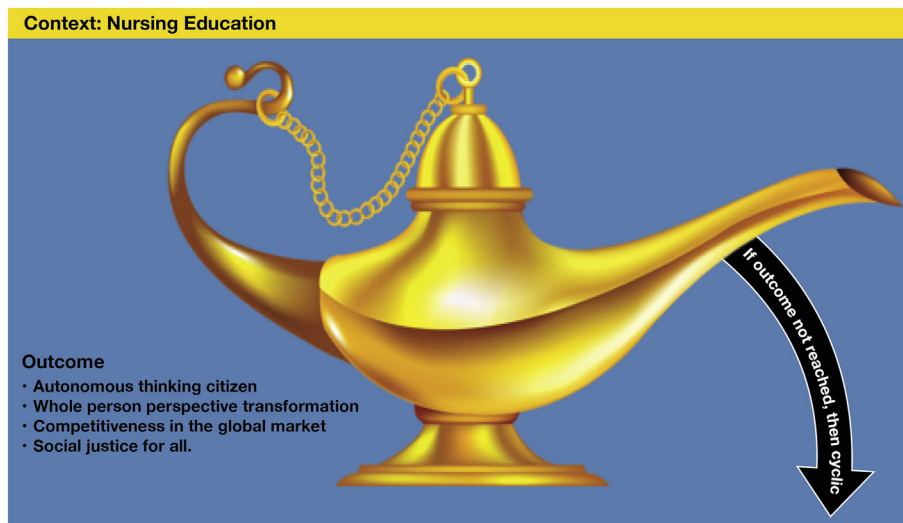


Fig. 5. The outcome.

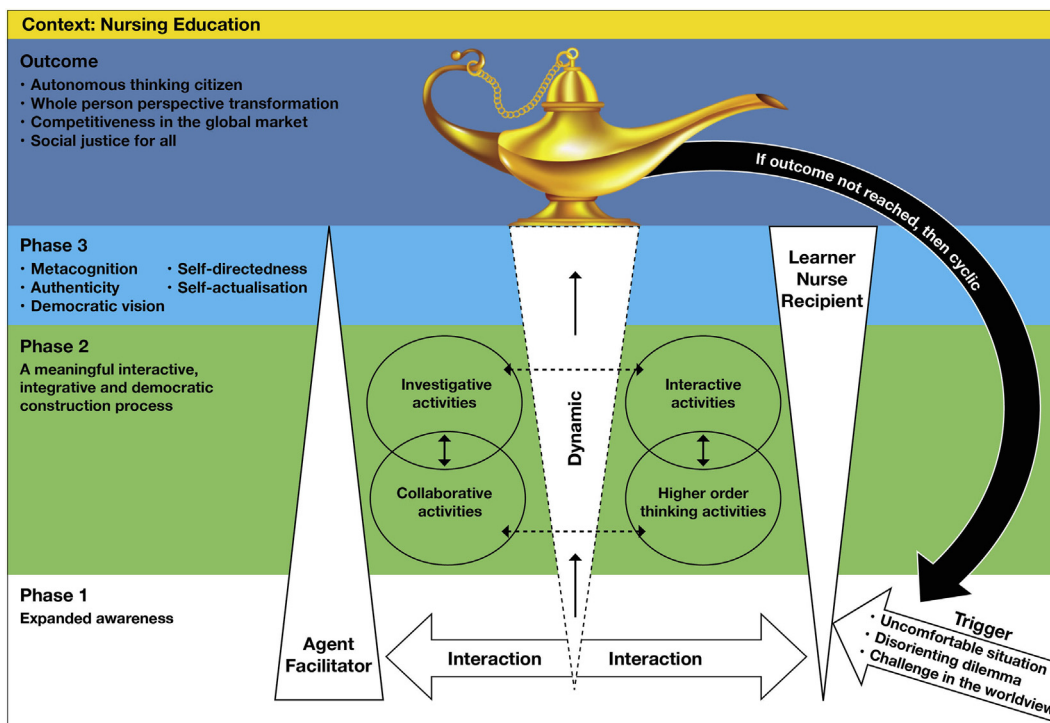


Fig. 6. Schematic representation of a model to facilitate transformative learning in learner nurses.

more factual knowledge is needed from the facilitator with expert facilitative skills. The broadening funnel in Phase 2 indicates the advanced level of meaningful engagement and critical reflection taking place through dialogue, reasoning, cooperative and collaborative activities. The broadest part of the dynamic lies in Phase 3 since at this stage, the nursing students are expected to engage in arguments, making use of logical reasoning to justify decisions and actions made based on the available evidence [23].

3.4.5. Process

The process and procedure of the model consists of interrelated learning activities which are: investigative, collaborative interactive and involve use of higher order thinking. The process and

procedure occur in Phase 2, which is characterised by meaningful, interactive, integrative and democratic construction process. It is the central phase where major work of transformative learning occurs. The background colour on the four joined circles is green which signifies creative thinking and problem solving, new ideas, intellectual growth and maturity. The learning activities are interconnected and have double pointed arrows indicating that the competencies do not occur in isolation.

3.4.6. Outcome

The outcome of transformative learning is represented with the dark blue colour, symbolizing inspiration, confidence, metacognition and maturity represented by the lit lamp. The outcome of

transformative learning is a graduate who is an autonomous thinking citizen, whole person perspective transformation, competitiveness in the global market and social justice for all. The black arrow from the spout of the burning lamp signifies the cyclic nature of transformative learning. According to de Bono in Ref. [22], the black colour symbolizes the ability to think about the next alternative if the process of transformative learning is not attained. Challenges and forever changing nursing education context may again expose nursing students in situations in which they lack knowledge and skills, causing the experience discomfort and dilemma, the cycle of transformative learning will begin again to acquire relevant knowledge.

The structure of transformative learning process is described in connection with the three interrelated phases namely, expanded awareness through self-reflection (Phase 1), meaningful interactive, integrative and democratic construction process (Phase 2) and metacognition (Phase 3).

• Expanded awareness through self-reflection

Phase 1 of the transformative learning process is the expanded awareness through self-reflection by the nursing student. The phase is triggered by uncomfortable situation when the learners experience disorientating dilemma or faced with events that challenge one's worldview. Transformative learning is triggered, the trigger is demonstrated by the arrow entering Phase 1.

Colour white symbolizes purity of facts as building blocks for transformative learning, innocence and need for information. Confusing and challenging learning experiences creates a disorienting dilemma. Nursing students develop a feeling of not being ready to engage with the learning encounter, and wonders if they have what it takes to achieve the task. In expanding awareness and reflecting, nursing students open their mind by actively seeking knowledge and understanding.

The transformative facilitator support, scaffold and encourage the nursing students in the process of knowledge acquisition and construction.

• Meaningful interactive, integrative and democratic construction process

Phase 2 is characterized by the nursing students seeking the strategy to employ transformative learning. The facilitator encourages and engages the nursing students in meaningful learning to promote the construction of knowledge out of the learners' experience, feelings and exchanges with other learners. The nursing students actively construct their own knowledge in research activities and cooperative teamwork. They engage in problem-based learning with ill-defined clinical scenarios involving higher order thinking. Nursing students engage in constructive dialogue, argumentation and discussions to develop essential communication skills.

Transformative activities develop learners into integrative thinkers, critical, reflective and analytical problem solvers. The facilitator structure learning experiences to be thought-provoking, induce curiosity and based on learners' interest. Construction of knowledge and skills is facilitated through teaching strategies such as reflective journal writing, nursing process, case studies and concept mapping and evaluation methods that promote transformative change. Transformative learning activities rigorously engage the nursing students in knowledge construction to prepare them to reach the metacognition level which constitute Phase 3 of the process of transformative learning.

• Metacognition

Phase 3 is the consolidation phase where nursing students demonstrate the developed metacognitive skills, cognitive maturity evidenced by the ability to manage own learning with less guidance from the facilitator. The colour blue symbolizes depth, expansiveness, inspiration, wisdom, stability and confidence required in transformative learning to consolidate thoughts and insights from various perspectives de Bono, in Ref. [22].

At this stage the facilitator significantly reduces scaffolding as the nursing students increase participation and responsibility in learning. The facilitator uses appropriate teaching strategies, assessment and evaluation methods which encourage team work such as community research projects and self-directed learning contracts. The nursing students demonstrate the ability to merge and integrate the acquired knowledge, skill, attitudes and values from the four disciplines of the diploma nursing programme. The nursing students demonstrate authenticity, have a democratic vision and are self-directed and self-actualized as indicated by the broad based of the nursing student's inverted triangle and a very narrow tip of the triangle from the facilitator perspective.

The black arrow starting from the spout symbolizes the ability to think about the next alternative if the outcomes are not achieved, compelling the nursing students and the facilitator to re-start the cyclic process of transformative learning.

4. Evaluation of the model

The model to facilitate transformative learning was evaluated using Chinn and Kramer [4] model evaluation guidelines. Five questions for critical reflection were used, namely: how clear, simple, general, accessible and important is the model? A panel of expert in theory-generation and qualitative research method evaluated the model for its clarity, simplicity, accessibility, generality and importance during a doctoral seminar. The positive feedback from the experts and concept analysis results assisted with the attainment of semantic clarity and consistency as well as structural clarity [3,6]. The study was conducted under the supervision and promotion of one professor, both with doctoral degrees and extensive knowledge in qualitative research, theory generating and model development. One promoter is an expert in nursing education focusing on critical thinking and reflective practice. Ethics approval was granted by the university, nursing education institutions that participated in the study and the provincial government.

The importance of the model is its significance to clinical practice, research and education. The formulated guidelines will assist the facilitators in the education and practice with effective facilitation of transformative learning nationally and internationally.

5. Original contribution of the study and limitations

The model was described with guidelines to facilitate transformative learning in nursing education to promote autonomous thinking of nursing students. Guidelines describe a set of systematically developed action statements that aim to fulfill various objectives [24]. The guidelines are an original contribution that will facilitate transformative learning of nursing students. A theoretical definition of transformative learning that is unique in nursing education was formulated using attributes identified from concept analysis [6]. The concept analysis on which the model was described has been published [6]. The description of the model is in response to a call for learning that is interactive, integrative, learner-centered and transformative by South African statutory bodies and education legislation. Transformative learning in education programmes would ensure that the curriculum is responsive to the global, national and provincial teaching and learning context.

Facilitators will be empowered to create a transformative learning environment to engage nursing students in meaningful, interactive, integrative knowledge construction process leading to learners who are self-directed and able to manage their own thinking process. The model and guidelines will be a challenge to relevant stakeholders like facilitators, nursing students, and policy makers to determine its impact in nursing education.

The design of the research is contextual in nature, and therefore makes it difficult to generalize the findings to other institutions. The model has not yet been practically implemented and validated.

6. Conclusion

The purpose of this study was to describe and evaluate the model to facilitate transformative learning of learner nurses in nursing education, the objective was acceptably accomplished. The model was described using Chinn and Kramer's method. The nature of the structure of the model was described within the six elements of practice theory using de Bono six thinking hats. The model evaluation was described using five relevant questions for critical reflection. An accurate application of the proposed guidelines will yield the anticipated results. The model was described as significant and applicable in all settings of clinical practice, research and education. The model and guidelines have a projected public health benefit in empowering graduate nurses who are capable of critical thinking, rational decision making and problem solving. Facilitators of health professionals will get crucial insights necessary to enhance effective learning that will result in quality and safe healthcare services. The relationship statements will serve as hypotheses for further research in the discipline of nursing education. Commitment and policy makers' collaboration is crucial for its success.

Competent nursing graduates are vital in effective healthcare delivery. The achievement of learning outcomes depends on the support and facilitation approach. The researcher recommend that facilitators and clinical preceptors should use and operationalise the model for facilitation of transformative learning in nursing education, nursing research and nursing practice.

Declaration of competing interest

The authors have no conflict of interest.

CRediT authorship contribution statement

Tebogo A. Tsimane: Conceptualization, Methodology, Data curation, Investigation, Validation, Writing - original draft, Writing - review & editing. **Charlene Downing:** Conceptualization, Methodology, Validation, Supervision, Writing - review & editing.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijnss.2020.04.006>.

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