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Scholarly Paper

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Editor-in-Chief
International Journal of Nursing Practice

Dear Editor,

RE: Implementation And Evaluation Of Critical Thinking Strategies To Enhance Critical Thinking Skills In Middle Eastern Nurses.

Please find enclosed a manuscript for consideration for publication in the International Journal of Nursing Practice. This article has not been published elsewhere.

The co-author has contributed significantly to this body of work and is in agreement with the content of the manuscript.

We believe the content of this manuscript should be of interest to the wide readership of your journal.

We look forward to your reviewers' comments.

Yours sincerely,

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**IMPLEMENTATION AND EVALUATION OF CRITICAL THINKING
STRATEGIES TO ENHANCE CRITICAL THINKING SKILLS IN MIDDLE
EASTERN NURSES.**

STRATEGIES TO ENHANCE NURSES CRITICAL THINKING SKILLS (short
running title)

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ABSTRACT

Purpose

The purpose of this study was to develop, implement and evaluate critical thinking strategies to enhance critical thinking skills in Middle Eastern nurses.

Basic Procedure

Critical thinking strategies such as questioning, debate, role-play and small group activity were developed and used in a professional development program which was trialed on a sample of Middle Eastern nurses (n=20), to promote critical thinking skills, encourage problem solving, development of clinical judgment-making and care prioritization in order to improve patient care and outcomes.

Findings and Conclusion

Classroom learning was transformed from memorization to interaction and active participation. The intervention program was successful in developing critical thinking skills in both the nurse educators and student nurses in this program. This program successfully integrated critical thinking strategies into a Middle Eastern nursing curriculum

Recommendations

1. Utilize evidence-based practice and stem questions to encourage the formulation of critical thinking questions;
2. Support the needs of nurse educators for them to effectively implement teaching strategies to foster critical thinking skills;
3. Adopt creative approaches to: (i) transform students into interactive participants (ii) open students' minds, stimulate higher-level thinking and problem solving abilities.

Key words: critical thinking strategies, questioning, debate, role-play, small group activity.

INTRODUCTION

The purpose of this study was to develop, implement and evaluate a new way of learning for twenty Middle Eastern nurses, by using critical thinking strategies such as questioning, debate, role-play and small group activity to promote critical thinking skills within a professional development program. Tommie, Nelms and Lane ¹ point out the diversity and complexity of nursing practice makes it essential to prepare nurses who think critically as well as analyse, synthesise and evaluate situations.

In 1992 in the USA, the National League of Nursing ² mandated nursing baccalaureate programs include the development of critical thinking skills as a core component in nursing curriculum. Soon after this, healthcare accreditation agencies around the world moved to include, critical thinking as a requirement for nurses when making clinical judgments concerning care provision (JCAHO)³. Brookfield (in Garrison⁴, p. 289) succinctly states critical thinking is “a very constructive activity with the ultimate purpose of gaining insight for the purposes of changing things for the better.”

LITERATURE REVIEW

Many authors, such as (Blair⁵, Brookfield⁶, Kramer⁷; Facione and Facione⁸, Kurfiss⁹, McPeck¹⁰, Paul¹¹) support the view that critical thinking is more than a set of skills. Critical thinkers can provide justifications for their actions – they have the ability to think through, project and anticipate the consequences of those actions. Schank¹² notes it is vital for nurses to master the skills of thinking and reasoning in order to constructively critique the value and application of new knowledge. Nowhere, is this process of critiquing

the applicability of new knowledge more needed, than in nursing education curricula. Therefore, when evaluating curriculum in terms of its structure, emphasis needs to be placed on the quality of the content and how students are able to process and evaluate the information (Royal College of Nursing [RCNA]¹³). The literature suggests the importance of using critical thinking strategies to develop critical thinking abilities.

Miller and Malcolm¹⁴ advocate instructional strategies to foster critical thinking that can be integrated into all levels of nursing curriculum. The authors further suggest how this integration will materialise, depends primarily on faculty members' level of discussion and participation, as they consider the necessity to increase teaching strategies that promote critical thinking. Paul¹⁵ notes, it is important for educators to “abandon methods that make students passive recipients of information and adopt those that transform them into active participants in their own intellectual growth” (p. 45). Nurse educators need to provide opportunities and appropriate teaching methods when teaching critical thinking, and Bittner and Tobin¹⁶ indicate instructional methods to enhance critical thinking should include creative approaches to open nurses' minds, broaden and augment their ways of thinking and facilitate the process of problem solving. The following sections will provide an overview of the preparatory, implementation and evaluation phases undertaken during this study.

METHODS

Preparatory phase

The preparation of the teaching and learning environment were keys to the success of this program. Nurse educators were accustomed to arranging classrooms in a military style arrangement and routinely used a didactic teaching style. In order to encourage classroom interaction, the classroom used for this program was arranged in a 'U' shape, which allowed all participants to have eye contact and to question and interact with each other. This was a totally new experience for nurse educators and students. To facilitate group work, four small student workrooms were identified and fitted with white/blackboards, as well as video recorders.

Mentorship to nurse educators

A variety of strategies have been reported as being effective in promoting, attaining and advancing the acquisition of critical thinking (Case¹⁷; Elliott¹⁸, Oermann¹⁹ and Schell²⁰). Drawing on the literature, four instructional methods (questioning, small group activity, role-play and debate) were used to foster critical thinking skills in Middle Eastern nurses during this study, and integrated into lesson plans within the curriculum. The education manager acted as a mentor to the nurse educators by providing literature and teaching resources on these critical thinking strategies to upgrade their knowledge and instructional techniques. This will be discussed further in the implementation phase. Additionally, the manager demonstrated the use of these critical thinking strategies in several teaching sessions, until the educators were confident in using each such strategy themselves. The manager also provided feedback to nurse educators after they delivered

their initial sessions and identified strategies for the nurse educators to improve their critical thinking teaching skills.

After preparing the teaching and learning environment the education program focusing on questioning, small group work, role-play and debate was implemented and this will be discussed in the next section of this paper.

Implementation phase of critical thinking strategies

Questioning strategy

Nurse educators utilized stem/guided questions (King)²¹ as a tool or device to induce critical thought. Students were also given a template of King's stem questions to assist in generating critical thinking questions. A sample of stem questions is reflected in Table 1.

Nurse educators used a 'round-robin' technique and engaged in thought-provoking questions to confirm students' comprehension of the material. For example, "explain why...(analysis of significance) "What will happen if...?"(prediction). Such critical thinking questions induced higher-level cognitive processes such as problem solving, analysis of ideas, inference, prediction and evaluation. Students were forced to go beyond the facts to think of each focal situation in a variety of ways. These questions also energised the participants to interact actively – it was a way to allow another voice in the classroom, other than that of the teacher. Nurse educators provided 'wait time' for students to respond in order to improve the quantity and quality of their answers. On completion of each session, about five minutes was set aside for participants to formulate critical thinking questions (CTQs), using the stem guide.

These CTQs were collected, shuffled and redistributed to the class. This method allowed students to answer each other's questions, as well as their own and were active listeners, alert and motivated. The facilitator's role was active and passive: active, when the facilitator would spring surprises on any student to answer questions and passive, when facilitating and clarifying answers as required. When students experienced difficulty in responding, the facilitator paused for a few seconds to give them time to consider the question. King's study found when students experienced difficulties, they were not necessarily seeking correct answers, but they were making mental connections between concepts that were already familiar to them.

Videotape presentations of scenarios were used as a device to support the questioning technique. During these sessions the facilitator would stop the videotape briefly to question participants about certain aspects of the scenario. For instance, "what is happening here?"(analysis). "What if.....had happened instead?" (prediction). Videotape sessions allowed for group discussions to convene as students shared their thoughts and asked more questions.

Educators also formulated questions with corresponding answers, which were typed onto flashcards. The class was divided into teams. One student from a team was randomly selected to start a question. Other students were required to think and analyse the question. An opposing team member was selected to give the correct response. If this student was unable to respond, the members within the team were given the opportunity to collaborate in order to produce the correct response.

When an incorrect response was verbalised, the team lost a point and the other team(s) was allowed to retrieve the correct answer. This playful approach created a relaxed

atmosphere and challenged students to engage actively and think prior to providing an answer.

Small groups strategy

Small group activities were conducted in almost all of the sessions with five students in a work-room. Students were randomly selected for group work so that they had the opportunity to interact with different individuals. During the group process students utilized the whiteboard or chalkboard to write, create diagrams and flowcharts to express their thinking and present their findings to other group members. They also formulated critical thinking questions, which they posed to their peers and discussions ensued.

Nurse educators commented that circulating around groups, listening and observing students, provided constructive feedback about the instructional process because it informed the facilitator which concepts needed clarification or modification. Students commented that this activity “keeps us interactive, thinking and we are not bored.”

Debate strategy

The debate process was explained and they were encouraged to ask questions about this activity. The topic for discussion was provided before the scheduled debate and they were randomly selected into two teams. Journal articles and references were given for background knowledge so that they could research the topic. Student judges and timekeepers were randomly selected and the judging process was explained.

The teams faced each other and the judge and timekeeper sat at the head of the two teams. During a debate, the facilitator only assisted when required. When all members had the opportunity to respond and argue their views, the student judge pronounced the verdict

with support from the nurse educator if necessary. Following the debate, students were encouraged to raise any issue(s). The educator asked their feelings about the debate process. Students formulated critical thinking questions, which were collected. The educator randomly picked questions and encouraged students to respond.

Role-play strategy

The facilitator explained this process and described the characters. The facilitator assigned roles for the students and rearranged the classroom. The actors improvised their behaviours appropriately to illustrate the expected actions for the particular scenario. The other students/audience sat in a semi-circle. The facilitator explained the role of the audience as active and interactive participants.

The audience participated and contributed to the discussion and analysis. Students had the opportunity to be creative and actively involved in a learning experience, in a non-threatening situation. Nurse educators were passive observers, who interceded as required. At the end of each role-play, the facilitator debriefed the class by asking questions, such as “how did this experience make you feel?” The students were encouraged to ask questions and used stem guides to generate their own critical thinking questions based on the scenario. These questions were collected and addressed. Clearly, not all of these strategies could be utilised within the framework of a single lecture.

RESULTS AND DISCUSSION

Direct participant observation including watching interactions and behaviours, listening, asking questions and examining materials was undertaken by the manager. Additionally, separate focus group interviews were undertaken with nurse educators as well as students in order to compare levels of satisfaction with the program. Overall both groups provided very positive feedback at focus group interviews and are reported as follows:

Focus group interview: The manager with two nurse educators

- Interviewer:* “Do you think Critical thinking can be developed.”
- N/Educators:* “Yes, especially when we were given the direction, preparation and the tools to use. For example, the stem guide question, workrooms, feedback, adequate resources.”
- Interviewer:* “What are your feelings about using critical thinking strategies as a method of instruction?”
- N/Educator:* “It is an effective way to teach -interactive and participative.”
- Interviewer:* “Why do you like these teaching strategies?”
- N/Educators:* “Because everyone’s involved, including us and helps the student to develop an inquiring mind.”
- Interviewer:* “Which strategy did you like best?”
- N/Educators:* “All of them – they all had their challenges. It challenged us too. Remember this is new to us too and it has been a positive learning experience to be used for the future.”
- Interviewer:* “You were observed while you were teaching. How did you feel about this?”

- N/Educators:* “We were nervous at first, but the environment was non-threatening as you always gave us timely constructive feedback – praised our efforts. It helped us improve.”
- Interviewer:* “Have you noticed any difference in the students’ performance in the classroom and clinical field?”
- N/Educator:* “Indeed! They have moved from being used to a didactic way of learning to being interactive. They learned to use a critical thinking approach to develop questions, are more diligent in asking questions and more confident in their practice. For example, an unusual dose of medication was ordered for a diabetic patient. The student reflected on her practice and the patient’s medical condition. Using her clinical judgement, she approached the head nurse for clarification – the medication was reviewed. The head nurse paged me to give me this vital feedback. There are several other examples such as this one.”
- Interviewer:* “Do you have anything to say?”
- N/Educators:* “We learnt a lot and will continue to teach in this manner. We developed ourselves by embracing critical thinking and used the tools and feedback to help us. It is nice to observe a positive change in the students’ behaviour – their interaction and participation which is a result of using critical thinking strategies.
- Focus group interview: The manager with the students.
- Interviewer:* “What do you think of critical thinking strategies?”
- Student:* “Our teaching instruction in the past was always memorization and writing, writing, writing! It was hard to write and understand the content at the same time. This is a much better way of teaching and learning. You’re not just giving us lectures, you are providing information by questioning - encouraging us to think and developing our minds.

Interviewer: “How do you feel about generating critical thinking questions?”

Student: “This is a good idea and the stem guide questions are very helpful. I like it (others acknowledged). Also when the teacher distributes other peoples’ questions and I don’t know the answers, I can learn from other students’ answers. I need to have critical thinking skills on the clinical field to make effective clinical judgements. I feel more confident now in delivering patient care (nods of approval).

Interviewer writes the four strategies on the board and asks students to rate them:

Various members: “Group work and questioning, then debate and role-play. It is not that we don’t like the others - we need more practice – keep it – they are fun and we liked it.”

Interviewer: “Why group work?”

Student: “Because when I have an idea, we can discuss it together, write on the board and share our ideas and then present to the other groups.”

Interviewer: “Do you have anything to say?”

Various members: “Our teachers were great – they enjoyed it too. Our Head-Nurses’ also gave us positive feedback. Keep using critical thinking strategies for other groups.”

This program successfully integrated critical thinking strategies into a nursing curriculum in this group of Middle Eastern nurses, and classroom learning was transformed from memorisation to interaction and active participation. Students were encouraged to problem solve, make clinical judgements based on facts and prioritise care in order to improve patient outcomes.

The students' ability to formulate critical thinking questions on the content material and in homework assignments improved by the end of the program. Examples of critical thinking questions by students by the end of this program are reflected below:

1. *What would happen if an elderly person falls and develops a fracture? (Prediction/hypothesizing)*
2. *How does ageing affect all the body systems? (Analysis of relationship: cause - effect)*
3. *What strategies can be implemented to deal with depression? (Application).*

King²¹ had similar findings in her study with psychology students and reported that teachers can enhance their (students') use of critical thinking questions by using critical thinking type questions in their teaching.

The development of faculty members and students was essential in order to make a change from a passive to an interactive process. Critical thinking strategies needed to be integrated into all lesson plans within the curriculum. Resources and devices such as workrooms, videotapes, critical thinking stem questions and so forth should be readily available for learning to take place.

Furthermore, instructors should have a sound knowledge of their curriculum content and adopt an interactive teaching style, utilising critical thinking techniques to encourage participation and interaction from the students to influence their thinking. Thus, critical thinking "becomes a daily experience." Elliott¹⁸ (p.5).

CONCLUSION

The educational program has developed individuals who have transformed from being passive or rote learners to having inquiring minds. They have socialised into critical

thinking and have started on a path that could lead them to be life long learners. Critical thinking in nursing practice can lead to safe, competent and quality care, as well as promote professionalism in nursing. Therefore, not only will patients' outcomes improve but also the actual healthcare environment should improve. One program cannot function independently to train all Middle Eastern nurses to be critical thinkers. Other programs have to be involved to integrate critical thinking into the curricula nationwide.

RECOMMENDATIONS

1. Utilize evidence-based practice and stem guide questions to assist and encourage the formulation of critical thinking questions.
2. Support the needs of nurse educators in order for them to effectively implement teaching strategies to foster critical thinking skills, and
3. Adopt creative approaches to: (i) transform students into interactive participants (ii) open students' minds and broaden and stimulate higher-level thinking and problem solving abilities.

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