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Original Research Article

The Use of Questions in Fostering Critical Thinking Among State Registered Nursing Students in Fako Division of Cameroon

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Abstract

Although critical thinking has become a core competency in the practice of nursing and a major apprehension of undergraduate nursing courses, observably, too many nursing graduates are unable to think critically. This has led to the provision of poor-quality care to patients. How nursing students are taught to acquire critical thinking remains unclear and is a call for concern. This study therefore sought to examine teacher's use of the questioning method in fostering critical thinking in State Registered Nursing (SRN) students in Fako Division of Cameroon. An exploratory sequential research design with the collection of both qualitative and quantitative data for triangulation was adopted for the study. Data was collected via interviews with 16 teachers and 4 focus group discussions with year two students from the selected SRN schools. 42 teachers and 105 year two students were also administered questionnaires. 24 classroom observations were carried out to observe teachers' questioning skills and finally 205 examination questions were analysed using Blooms taxonomy. Thematic analysis was used for qualitative data while quantitative data was analysed using the statistical package for social sciences version 20.0 for descriptive statistics. The age range for students was between 18 to 26 years and a majority 92 (87.62%) were females while a majority of the teachers 15 (35.72%), had a work experience of 2-5 years and 6- 10 years. The major theme that emerged from the interviews was 'question and answers" and the categories included "selected students' response" and "insufficient motivation". Quantitative data analysis revealed several practice gaps such as 72 (68.5%) of the students disagreed that teachers do not focus questions on particular students, while 70 (66.6%) disagreed that teachers allowed adequate time for them to reflect before responding to questions. The findings also revealed that majority of the written examination questions 199 (97.07%) fell under the category of lower thinking order skills. Teachers do not use the questioning method appropriately, hence cannot effectively foster critical thinking in nursing students. The organisation of training workshops on how to use questions to foster CT is therefore necessary.

Keywords: Critical Thinking, Questioning method, State Registered Nurses in Cameroon

INTRODUCTION

Over the years critical thinking (CT) has been endorsed as one of the most essential tools for nursing education as without it, it is common to make errors in caregiving (Yildirim et al., 2011). These errors can lead to prolong stays in hospital arising from the development of several complications as well as increasing financial burdens for patients, and in some cases job dissatisfaction on the part of the nurse. This therefore implies that decision-making and problem solving can only be considered effective if the nurse uses critical thinking skills to arrive at possible solutions. Furthermore, in 1991, the National League for Nursing (NLN) identified critical thinking (CT) as a core competency in the practice of nursing. CT has since then become a major apprehension of undergra-

duate nursing courses, particularly in regards to the way by which teachers should instruct their students to think and develop CT. Moreover, the diversity and complexity of nursing practice makes it necessary to prepare nurses who can think critically, and who have a sound education in nursing science and the humanities.

However, observably, many nursing graduates are unable to provide quality care due to their inability to think critically. Snyder and Snyder (Snyder and Snyder, 2008), articulated that critical thinking is not an innate ability. Although some students may be naturally curious, they require training to become systematically, analytical, fair, and open-minded in their quest of knowledge. Teachers therefore play a very significant role in the learning process and the nurturing of certain skills such as CT of their students, as they can significantly strengthen the way their learners think (Slameto, 2014). How these student nurses are taught to foster critical thinking in them is therefore a call for concern

Several definitions have been attributed to critical thinking. For instance, the Delphi Panel's experts defined CT as "purposeful, self-regulatory judgment" (Facione, 1990), whereas Yildirim et al. (2011), views critical thinking as the process of searching, obtaining, evaluating, analysing, synthesising and conceptualising information as a guide for developing one's thinking with self-awareness, and the ability to use this information by adding creativity and taking risks. Furthermore, literature reveals that CT thinking has two major components; critical thinking skills and critical thinking dispositions. According toFacion (Facione, 1990), CT skills are cognitive skills required in analysis, problem solving and decision making andthere exist 6 major critical cognitive skills which include; interpretation, analysis, evaluation, inference explanation and self-regulation. Paul and Elder (Paul and Elder, 2010) suggested that consistent application of the standards of thinking to the elements of thinking result in the development of intellectual traits of: humility, courage, empathy, autonomy, integrity, perseverance, reason and fair-mindedness which are often considered as critical thinking dispositions. In other words, for one to become a critical thinker, one must develop critical thinking dispositions.

Fortunately, many critical thinking researchers maintain that critical thinking skills and abilities can be taught (Lai, 2011). Refining students' critical thinking skills is a fundamental role of schools. Unfortunately, observably, although there is growing number of awareness to endorse higher cognitive skills in educational programs in Cameroon, the concept of critical thinking has received insignificant attention especially in State Registered Nursing (SRN) training schools. For instance, according to Eyinga and Agborbechem (Eyinga and Agborbechem, 2018), a majority of current nursing curricula in Cameroon does not include specifications regarding expected competences and these programmes essentially assess knowledge and neglect competence assessment such as critical thinking. Furthermore, a study carried out by Eyinga, (2018), on the critical thinking level of bachelor degree nursing students in two selected nursing schools in the center region of Cameroon revealed that, students' level of critical thinking (CT) was significantly low. Another study by Atanga et al. (2015) revealed that though a majority of nurse tutors were aware of the weaknesses associated with the lecture method of teaching, it remains the most commonly used teaching method. Moreover, Tchombe (Tchombe, 2009), describes this type of teaching method as one that favours teacher dominanceand does not favour the nurturing of critical thinking skills in students as the teacher monopolises control and gives little opportunity to the student.

Not only have questions been documented as a good method to increase class interaction between teacher and students as well as students and students, but also a good teaching strategy used in nurturing critical thinking skills and dispositions in students. This implies that if questions are well constructed, they become tools used in checking for understanding and improving of critical thinking skills. Hence, the practice of questioning is central to the development of critical thinking and should therefore become a necessary component of the learning process. According to Wang and Seepho (Wang and Seepho, 2017), questioning can be seen as a rigorous process, which aims to open up issues about the reasonableness of a belief, evaluate evidence and counterevidence. The process of questioning can help us to critically reflect on our own beliefs and those of others, and detect the strengths and weaknesses of such beliefs. Hence, asking appropriate and critical questions can stimulate and direct critical thinking skills and dispositions by pushing the learner forward towards the continuous exploration of opinions, insights, and judgments.

Paul and Elder (2007), suggested a series for critical questioning urging teachers to pose questions which require students to apply them, accountable for them and internalize them, ensuring that some 'mental work' (reflecting on the question, analysing and evaluating possible responses) must be done within the students' minds before arriving at an appropriate response. Moreover, Halton (Halton, 2019) affirms that teachers need to give students an opportunity to explore questions that do not necessarily have one correct answer. In addition, Fisher (Fisher, 2003) and Paul and Elder (Paul and Elder, 2002), stipulated that educators should encourage learners to be curious and ask questions which are of interest to them. The question-and-answer session should therefore not be limited to the teacher playing the role of asking questions and the student that of responding only. It is important to switch roles with the same aim of fostering critical thinking skills in the learner.

However, Nopta - Apsari (2016), highlighted that effective questioning for critical thinking cannot be

mentioned without paying particular attention to Bloom's critical cues. Bloom's thinking prompts are questions related to the six thinking skills in Bloom's Taxonomy ranging from the lowest level (knowledge) to the highest level (evaluation). They include: (i) Knowledge, (ii) Comprehension, (iii) Application, (iv) Analysis, (v) Synthesis, and (vi) Evaluation. The last three levels (analysis, synthesis and evaluation) promote critical thinking more because they are higher order thinking skills.Ikuenobe (Ikuenobe, 2002), further suggested the use of analytical questions that go beyond 'what' and ask 'how' and 'why' as such questions seek to explore, examine, clarify, dissect, reflect on and relate ideas.

Vygotsky's socio-cultural theory postulates that learners learn best when taught within their "zone of proximal development" with a focus on emerging skills rather than skills that are too advanced (Keith, 2019). He considers the Zone of Proximal Development (ZPD) as the area where the most sensitive instruction or guidance (scaffolding) should be given - allowing the learner to develop skills they will then use on their own, hence, developing higher mental functions (McLeod, 2018). Asking challenging or provoking questions to students, therefore causes them to think, imagine and create which favours the concept of scaffolding and teaching at the ZPD, hence nurturing CT. Furthermore, Paul and Elder (2010) frame work of CT (stage theory) assumes that, there are predictable stages through which every person who develops as a critical thinker passes through. They also stipulated that there are 8 parts or elements of thinking which play a vital role in the development of critical thinking skills and dispositions. Theseinclude; purpose, attempt, assumptions, point of view, data, information and evidence, concepts and ideas, inference or interpretation and lastly, implication and consequence.

According to Atkinson and Shiffrin (1968) stage theory (information processing theory), humans do not merely respond to stimuli from the environment, instead they process the information they receive. The information can be stored, retrieved and transformed using "mental programs", with the results being behavioral responses (McLeod, 2008). Furthermore, various methods such as repetition, connecting information, relating information to meaningful experiences or other information, and breaking up information into smaller chunks can be used to store information in the long-term memory. This therefore implies that when questions are asked, students will need time to process the information, try to make connections between old and new information and in so doing, will undergo some 'mental work' which leads to the fostering of CT. In addition, Becker (1999), suggested that teachers should remain silent for about 3-4 seconds to allow the students to formulate their answers and after the student responds, pause for a second or two without comment or reaction.

Empirically, a number of studies have been carried out on questioning and critical thinking. For instance, Mahmud et al. (2021), carried out a study with main objective to identify the oral questions that can encourage students' critical thinking used by teachers when teaching mathematics. The study revealed that, mathematics teachers frequently use three types of oral questions to encourage their students to think critically: prompting questions, reflective questions, and clarification questions. It was concluded that these types of oral questions are effective at encouraging students to think critically when trying to solve mathematical problems. Suryana et al. (2021), also carried out a study on model of teachers' questioning skill for developing critical thinking skill in early childhood education in West Sumatra, Indonesia which revealed that children's critical thinking skills are formed by two principles: first, teacher's questioning skills which acted as mentoring principles; second, questions framed in open-ended question model.

In the same line, Mustika et al. (2020), carried out a study, to examine the level of questions used by the teacher and its contributions to students' critical thinking. The findings showed that, the teacher used both low order questions (63%) and high order questions (37%). Additionally, it was also found that lower-order thinking questions could not facilitate students to think critically, however, it only leads the students to understand the concept given. The study further concluded that low order questions, related to recalling facts or understanding factual information, were often used than high order questions, which require students to have independent thinking and reasoning. Li (2020), also carried out a study on questions on critical thinking' with the main objective to explore whether the open-ended questions which are constructed to develop critical thinking (CT) in China's English textbook, were effective. Findings revealed that most of the questions fell into non-CT group, therefore ineffective to enhance CT.

Santoso et al. (2018), carried out an experimental study to examine how student's questions skill correlates to student's critical thinking skills in the learning of chemistry. The result showed that the ability to ask question skills of student has a strong correlation with the students' critical thinking skills. It concluded that the level of the questions that play an important role in critical thinking skills is the question levels of predictive, analysis, evaluation and inference. Furthermore,the findings of the study by Rashid and Qaisar (2016), suggested that questioning was a productive teaching approach in promoting critical thinking among students in Pakistani context and that students enhanced their confidence and developed critical thinking attitudes by interacting with class room activities and with teacher and their peers as well as critically examining the opinions of other students during intervention.

Finally, Sano (2014), also carried out a study to investigate the cognitive levels of questions teachers asked based on Bloom's Taxonomy (1956), and how learners responded to teachers' questions in language

classrooms in a Japanese university EFL context. The results indicated that the teachers asked higher-order questions more frequently than teachers in other studies. Despite holding different beliefs concerning how to teach critical thinking, both teachers were aware of critical thinking in their questioning behavior. Furthermore, students explained reasons for silence after some questions such as insufficient response time, inadequate grammar and vocabulary, and fear of making mistakes. It can be concluded that the appropriate use of the questioning method will definitely lead to the fostering of CT in students. This current study therefore sought to examine the use of the questioning method in fostering critical thinking in nursing students in some selected state registered nursing schools in Fako Division of Cameroon.

MATERIALS AND METHODS

Study Design

The study employed an exploratory sequential design with the use of mixed method approach where both qualitative and quantitative data were collected and the findings triangulated.

Sampling Method and Sampling Size

A multistage sampling method was used. Phase one included simple random sampling of 16 nursing teachers (4 teachers per school) for the interviews and 7-12 students in each school for the focus group discussions. Phase two included simple random sampling of 8 teachers (2 teachers per school) for classroom observations. Phase three consisted of simple random sampling of 42 teachers and recruitment of all year two students (105) in all four nursing schools to respond to the survey questionnaire. Finally, phase four included simple random sampling to select written examination questions (205 questions) of five major year two courses for classification using the cognitive levels of questions based on the revised Bloom's taxonomy.

Data Collection

Before data collection, an authorisation letter to carry out research was obtained from the Head of Department of Educational Psychology and an ethical clearance was also obtain from the Faculty of Health Science Institutional Review Board (FHS-IRB) of the university of Buea. Informed consent was obtained from all participants and confidentiality was ensured by not sharing any information to persons not concerned with the study and also by using codes instead of names. A pilot study was carried out at the Divine Amore School of Midwives and Health Personnel, Buea. This helped in ensuring the reliability and validity of the study's instruments for data collection. All the research instruments were designed to meet the objective of the study. The major instruments for data collection included;

i) An interview guide for interviews with teachers that lasted for approximately 20 minutes in their respective offices and an interview guide for focus group discussion with students that lasted approximate 30 minutes in their classrooms after school hours. All interviews were tape recorded and were conducted in English language.

ii) An observation guide which was used to observe teachers questioning behaviours in a classroom setting. Each teacher was observed three times and for a minimum of 60 minutes per observation, making a total of 24 classroom observations.

iii) Two sets of questionnaires with one addressed to teachers and the other addressed to students was also used for data collection. The questions were designed using a 4 point likert scale (agree , strongly agree, disagree and strongly disagree).

iv) Finally, a checklist (document analysis form) designed to categorise the written examination questions under the cognitive levels of Blooms revised taxonomy. A tally method was used to categorise questions under higher order thinking (create, evaluate or analyse) and lower order thinking (apply, understand or remember) and the frequency was calculated.

Data Analysis

All interviews were analysed using the thematic analysis method. The recordings were transcribed verbatim and read about five times to get a better understanding and to search for similarities and relevant issues related to the objective of the study. All codes with similar meanings were identified and grouped together in order to create categories. These categories were then placed under the major theme that emerged from the interviews. Finally, the researcher wrote a narrative report supported by extracts from the participants' responses as evidence of the data. All teachers interviewed were assigned codes according to the order in which they were interviewed such as KI1, KI2 just to name a few which represents key informant1, key informant 2. For the focus group discussions, each group was assigned a code such as FG1, FG2 to represent the various groups and in the order in which the discussions were conducted.Data from questionnaire was analysed using the statistical package for social science (SPSS) version 20.0. Descriptive statistics were used for all variables and they were presented on tables in frequencies and percentages. For classroom observations, descriptive statistic was obtained via calculating the frequency of each observed activity.Analysis of the examination questions was done manually by tally method where frequencies were

recorded in groups of five. All questions were distributed under the various elements in the Bloom's revised taxonomy (2001).Descriptive statistic was obtained by calculating the sum of all the items under each thinking skill (higher or lower order). A total of 205 questions or items were examined.

RESULTS

Demographic characteristics of participants.

The age range for students was between 18 to 26 years and a majority 92 (87.62%) were females as seen on Table 1 below. With regards to teachers, a majority 30 (71.42%) were female and most of the participants 15 (35.72%) , had a work experience of 2-5 years and 6- 10 years as seen on Table 2 below.

Examination of teacher's use of questioning method to foster critical thinking in nursing students Qualitative data

Based on the interviews and Focus group discussions, similar theme and categories emerged from data analysis. The theme was'question & answer session', while the categories included: 1) Selected students respond and 2) Insufficient motivation.

The questioning method was viewed by both teachers and students as a method that was frequently used by most teachers with the central idea of asking questions and receiving responses (question and answer session).

"At the start of the lesson, I ask questions on previous lectures & new topic" KI1
"I ask students questions on the lesson and they respond. They also ask me questions" KI7
"I ask a series of questions for students to answer. They give several responses and I correct them" KI15
"Teachers ask questions about the topic and we answer" FG2
"There is question and answer by both teachers and students" FG 3

Selected Students Respond

In further interviewing participants to get a better understanding on how teachers use the questioning method to foster CT, a majority of the participants reported that though all of the teachers did use the questioning method in most of their classes, questions were often addressed to certain groups of students.

"Days that I have enough time I ask questions to the entire class & other days I focus on smart students". KI4
"I ask questions mostly to lazy or weak students". KI7
"I mostly address my questions to students who are weak". KI12
"I go with students who are interested in learning" KI 16
"Most teachers focus on the intelligent students." FG1
"Everyone is always attentive because there are some teachers that will call you if you are making noise" FG2
"A few teachers throw questions to everyone." FG4

Insufficient Motivation

Since questioning plays a vital role in fostering CT, it is therefore important to motivate students to ask and respond to questions. A majority of the teachers were of the opinion that though they tried to motivate students to respond or ask questions, most of these students just would not cooperate with reasons unknown to these teachers.

"I do motivate students by giving marks to those who ask and answer questions." KI10

"When a student can't respond to a question, I ask another student to respond, if still wrong, I move to the next student." KI3

"Most students are not willing to ask questions, so I do most of the asking and I only provide hints and prompts to students who show interest in responding" KI4

"I let those who want to ask go ahead but the rest, I just let them be" KI15

On the other hand, students were of the opinion that even though some teachers did motivate them to ask or respond to questions, a greater majority were accountable for their non-compliance. This was elaborated with the following views: judgmental attitude of some teachers, favouritism and bad or no compliments from teachers as well as poorly structured or irrelevant questions and lastly, no response to most students' questions.

"When you give a wrong response, the teacher will just ignore you and ask another person.Moreover, some teachers don't say anything, so you are even more confused because you don't know if you are wrong or right"FG1
"Some teachers give good compliments to others and nothing to some, which makes us sometimes to feel inferior" FG1
"Very few teachers will further explain the questions for you to answer" FG2
"Sometimes we don't answer questions because the teacher is too difficult and makes the class tense."FG3
"Some teachers over ask questions. When you answer the first one, she will ask another one. So I just stay quiet

Table 1. Distribution of Students by Demographic Characteristics

School	N	Sex		Age		
		Male	Female	18-25yrs	26-36yrs	≥ 37yr
SRN Limbe	37 (35.23%)	5 (4.76%)	32 (30.48%)	31 (29.52%)	6 (5.71%)	0 (0.00%)
Maflekumen	23 (21.90%)	2 (1.90%)	21 (20.00%)	17 (16.19%)	6 (5.71%)	0 (0.00%)
RHIBMS	20 (19.04%)	2 (1.90%)	18 (17.14%)	17 (16.19%)	3 (2.86%)	0 (0.00%)
BUIB	25 (23.81%)	4 (3.80%)	21 (20.00%)	22 (20.95%)	3 (2.86%)	0 (0.00%)
Total	**105 (100.00%)**	**13 (12.38%)**	**92 (87.62%)**	**87 (82.86%)**	**18 (17.14%)**	**0 (0.00%)**

Table 2. Distribution of Teachers by Demographic Characteristics

School	N	Sex		Work Experience			
		Male	Female	2-5yrs	6-10yrs	11-15yrs	≥16yrs
SRN Limbe	13 (30.95%)	2 (4.76%)	11 (26.19%)	1 (2.39%)	4 (9.52%)	6 (14.2%)	2 (4.77%)
Maflekumen	6 (14.28%)	2 (4.77%)	4 (9.52%)	4 (9.52%)	2 (4.76%)	0 (0.00%)	0 (0.00%)
RHIBMS	7 (16.66%)	3 (7.14%)	4 (9.52%)	6 (14.2%)	1 (2.39%)	0 (0.00%)	0 (0.00%)
BUIB	16 (38.09%)	5 (11.90%)	11 (26.19%)	4 (9.52%)	8 (19.04%)	3 (7.14%)	1 (2.39%)
Total	**42 (100%)**	**12 (28.58%)**	**30 (71.42%)**	**15 (35.72%)**	**15 (35.72%)**	**9 (21.42%)**	**3 (7.14%)**

so that she will go." FG3
"At times some teachers ask irrelevant questions but I think it is just to make the class lively." FG4

Quantitative findings

i) Questionnaire

a) Teachers

A majority of the teachers agreed 21 (50.0%) or strongly agreed 16 (38.1 %) that they provided hints and prompts that guide students on how to respond to the questions while majority 24 (57.2%) disagreed to not focusing questions on particular students as seen on Table 3 below.

b) Students

A majority 72 (68.5%) of the students disagreed/ strongly disagreed that teachers do not focus questions on particular students, 50 (47.6%) agreed that teachers motivate them to respond to questions and 41 (39%) disagreed to teachers allowing adequate time for them to reflect before responding to questions. However a majority 81 (77.1%) also agreed / strongly agreed that teachers provide hints / prompts that guided them on how to respond to the questions as seen on Table 4 below.

ii) Classroom observations

Upon classroom observations of teachers, only 1(12.50%) and 2 (25.00%) did modeled their thinking and provided hints/ prompts to students respectively while 6 (75.00%) focused questions on particularly students and6 (75.00%) did not allow adequate time for students to think and respond as seen on Table 5 below.

iii **Document Analysis of Examination Questions**

Classifying the cognitive levels of five major second year nursing courses using Bloom's revised taxonomy, the findings revealed that, of the 205 questions, only 6 (2.93%) fell under the category of higher order thinking skills while 199 (97.07%) fell under the category of lower order thinking skills as shown on Table 6 below. Conclusively, the finding shows that a majority of examination questions do not foster critical thinking.

Table 3. Analysis of Teachers' Responses on the use of Questioning Method

items	Stretched				Collapsed	
	SA	**A**	**D**	**SD**	**SA/A**	**SD/D**
I encourage students to ask questions	31 (73.8%)	9 (21.4%)	2 (4.8%)	0 (0.0%)	40 (95.2%)	2 (4.8%)
I do not focus questions on particular students (the smart and intelligent or the weak ones)	5 (11.9%)	6 (14.3%)	18 (42.9%)	13 (31.0%)	11 (26.2%)	24 (57.2%)
I spend most of the class time on asking questions	3 (7.1%)	3 (7.1%)	25 (59.5%)	11 (26.2%)	6 (14.2%)	36 (85.7%)
I begin with simple questions before moving to complex ones	8 (19.0%)	11 (26.2%)	12 (28.6%)	11 (26.2%)	19 (45.2%)	23 (54.8%)
I ask mostly questions that challenge students to think	13 (31.0%)	21 (50.0%)	7 (16.7%)	1 (2.4%)	34 (81.0%)	8 (19.1%)
I provide hints / prompts that guide students on how to respond to the questions	16 (38.1%)	21 (50.0%)	5 (11.9%)	0 (0.0%)	37 (88.1%)	5 (11.9%)
I motivate students to respond to questions	17 (40.5%)	19 (45.2%)	5 (11.9%)	1 (2.4%)	36 (85.7%)	6 (14.3%)
I allow adequate time for students to reflect before responding to questions	12 (28.6%)	23 (54.8%)	5 (11.9%)	2 (4.8%)	35 (83.4%)	7 (16.7%)
I do not respond to my own questions	5 (11.9%)	13 (31.0%)	17 (40.5%)	7 (16.7%)	18 (42.9%)	24 (57.2%)
I do not ask questions on other issues not related to the topic or objective	5 (11.9%)	8 (19.0%)	15 (35.7%)	14 (33.3%)	13 (30.9%)	29 (69.0%)
MRS	**115 (27.4%)**	**134 (31.9%)**	**111 (26.4%)**	**60 (14.3%)**	**249 (59.3%)**	**171 (40.7%)**

n= 42 SA= Strongly Agree , A= Agree, D= Disagree , SD = Strongly Disagree

Table 4. Analysis of Students' Responses to Teacher's use of the Questioning Method

items	Stretched				Collapsed	
	SA	**A**	**D**	**SD**	**SA/A**	**SD/D**
Teachers encourage us to ask questions	83 (79.0%)	15 (14.3%)	6 (5.7%)	1 (1.0)	98 (93.3%)	7 (6.7%)
Teachers do not focus questions on particular students (smart or weak ones)	13 (12.4%)	20 (19.0%)	37 (35.2%)	35 (33.3%)	33 (31.4%)	72 (68.5%)
Teachers do not spend most of class time asking questions	4 (3.8%)	17 (16.2%)	59 (56.2)	25 (23.8%)	21 (20%)	84 (80%)
Teachers begin with simple (easy) questions before moving to complex (difficult) ones	15 (14.3%)	35 (33.3%)	32 (30.5%)	23 (21.9%)	50 (47.6%)	55 (52.4%)
Teachers ask questions that challenge us to think	46 (43.8%)	40 (38.1%)	15 (14.3%)	4 (3.8%)	86 (81.9%)	19 (18.1%)
Teachers provide hints / prompts that guide us on how to respond to the questions	25 (23.8%)	56 (53.3%)	18 (17.1%)	6 (5.7%)	81 (77.1%)	24 (22.8%)
Teachers motivate us to respond to questions	10 (9.5%)	50 (47.6%)	14 (13.3%)	31 (29.5%)	60 (57.1%)	45 (42.8%)
Teachers do not respond to their own questions	21 (20.0%)	59 (56.2%)	22 (21.0%)	3 (2.9%)	80 (76.2%)	25 (23.9%)
Teachers allow adequate time for us to reflect before responding to questions	2 (1.9%)	33 (31.4%)	41 (39.0%)	29 (27.6%)	35 (33.3%)	70 (66.6%)
Teachers do not ask irrelevant questions (questions not related to the course objectives)	11 (10.5%)	23 (21.9%)	37 (35.2%)	34 (32.4)	34 (32.4%)	71 (67.6%)
MRS	**230 (21.9%)**	**348 (33.1%)**	**281 (26.7%)**	**193 (18.3%)**	**578 (55.0%)**	**474 (45%)**

n= 105 SA= Strongly Agree, A= Agree, D= Disagree, SD = Strongly Disagree

Table 5. Analysis of Classroom Observations of Teachers

S/N	Teacher's Actions Observed	Done/ Yes	Not Done/ No
1	Asked many questions within lessons.	2 (25.00%)	6 (75.00%)
2	Focused questions on particular students e.g. students making noise, smart students & very quiet students.	6 (75.00%)	2 (25.00%)
3	Spent most of class time asking questions.	1(12.50%)	7 (87.50%)
4	Asked more of challenging questions.	2 (25.00%)	6 (75.00%)
5	Provided hints/ prompts to students.	2 (25.00%)	6 (75.00%)
6	Motivated students to ask questions.	2 (25.00%)	6 (75.00%)
7	Allowed adequate time for students to think and respond.	2 (25.00%)	6 (75.00%)
8	Asked irrelevant questions.	0 (0.00%)	8 (100.00%)
9	Modeled their thinking.	1(12.50%)	7 (87.50%)
10	Others		
	Warned students against mockery behaviour such as provoking those who couldn't give right responses.	3(37.50%)	5(62.50%)

Table 6. Analysis of Cognitive Levels of the Various Questions in Five Examination Papers Based on Bloom's Revised Taxonomy

Cogn. Level	Higher Order Thinking Skills			Lower Order Thinking Skills			Total
Course	Create	Evaluate	Analyse	Apply	Understand	Remember	
Family Planning	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	17 (54.83%)	14 (45.20%)	31 (100.00%)
Surgical Emergencies	0 (0.00%)	1 (3.45%)	1 (3.45%)	0 (0.00%)	6 (20.69%)	21 (72.41%)	29 (100.00%)
Obs& Gyns Disorders	0 (0.00%)	0 (0.00%)	3 (6.67%)	2 (4.44%)	7 (15.56%)	33 (73.33%)	45 (100.00%)
Medical Pathologies	0 (0.00%)	0 (0.00%)	1 (1.81%)	1 (1.81%)	16 (29.09%)	37 (67.27)	55 (100.00%)
Pathologies 3	0 (0.00%)	0 (0.00%)	0 (0.00%)	2 (4.44%)	12 (26.67%)	31 (68.89%)	45 (100.00%)
Total	**0 (0.00%)**	**1 (0.49%)**	**5 (2.44%)**	**5 (2.44%)**	**58 (28.29%)**	**136 (66.34%)**	**205 (100.00%)**

DISCUSSION

Findings revealed that majority of the teachers do not use the questioning method effectively in order to foster CT in nursing students. Many gaps in practice were acknowledged by teachers and students leading to the inadequate implementation of this method both orally and written in fostering CT. Nevertheless, some activities were also performed though not sufficient which could lead to the nurturing of critical thinking in students. Moreover, some teachers placed the blame on students while most students reported not satisfied with teachers' actions.

Qualitatively, the findings revealed that though most of the teachers knew what the questioning method/ strategy entailed, they did not put it into practice. The major categories that emerged from the qualitative data included; selected students' response and insufficient motivation. Through the questioning process, students are requested to respond actively to questions of all cognitive domains. Furthermore, this process can help the learner to critically reflect on their own beliefs and those of others and detect the strengths and weaknesses of such beliefs. This continuous reflection and internal analysis that goes on within the individual, helps in cognitive development of the learner. Hence, asking appropriate and critical questions can stimulate and direct critical thinking and dispositions by pushing the learner forward towards the continuous exploration of opinions, insights and judgements.

Some of the major reasons that accounted for selected students' response were the fact that teachers focused questions on particular students either smart or lazy ones as some tried to avoid wrong responses and others did not want to waste time. It is rather wise to use wrong responses as opportunities to explore students' thinking. More questions could be asked in different directions to make the student think. Moreover, Halton (2019) affirms that teachers need to give students an opportunity to grapple with questions that do not necessarily have one correct answer. This ascertains that the goal is not getting the right answers but stimulating students to think out of the box. As such, students learn how to see things from various points of view. This is

particularly important for the nurse who has to from day to day come up with different nursing interventions to meet patient's needs especially if after evaluation, the intervention implemented did not yield the expected outcome.

Teachers not motivating students enough to ask questions are also considered an inappropriate action when fostering CT is a major focus of the teaching and learning process. Paul and Elder (2002), suggested that students need to be active questioners and thinkers in order to facilitate the acquisition of CT. Moreover, Fisher (2003) also supported this view by reiterating the fact that educators should encourage learners to be curious and ask questions which are of interest to them. It is important to switch roles such that students pose questions about materials being explored which invite them to focus more closely and examine implications more carefully leading to reflection which is an exercise of CT.

Quantitatively, the descriptive analysis also revealed that teachers focused questions on particular students, do not motivate students to ask questions which concurs with the qualitative findings. In addition, the findings also revealed that a hand full of teachers do ask questions not related to the topic or objective and most times they do not allow adequate time for students to reflect before responding to the questions. Using the questioning method effectively in fostering CT in the learners entails creating an environment that encourages intellectual curiosity, where students feel comfortable to express their opinions based on the interesting questions asked. When questions address students' point of interest, they become stimulated to look for responses so as to satisfy their curiosity. This further signifies that teachers should formulate questions that are in line with the learning objectives that meet the needs of the students.

It is crucial for teachers to provide adequate time for students to reflect before responding to questions. This 'wait' time for the teacher and 'think' time for the student enables the student to reflect over the question while searching for a response. Students need time to assimilate the information given and do some mental work in order to arrive at a given response. This mental work may involve aspects of reflecting on the questions, analysing and evaluating possible responses which are all aspects of critical thinking. Hence, teachers must exercise patience and accord students some time to process the mental work. Moreover, Becker (1999), recommends teachers to remain silent for about 3 - 4 seconds to allow the students to formulate their answers and after the student responds, pause for a second or two without comment or reaction. This will prompt further thought and comment on the part of the student. Hence, the more thoughtful and complex their responses are likely to be. Moreover, no matter how easy a teacher may think a question is, it is often vital to be patient to seek responses from the learner.

Upon analysis of the written examination questions, the findings revealed that a majority of the questions fell under the category of lower order thinking questions when classified under the cognitive levels of Bloom's taxonomy. These types of questions barely foster CT. Moreover, this view is supported by Nopta - Apsari (2016), who opines that the last three levels of Bloom taxonomy (analysis, synthesis and evaluation) are considered higher order thinking questions and effectively promotes CT. This therefore implies that teachers need to formulate questions that favour higher order thinking to meet the above cognitive level. Ikuenobe (2002), further suggested the use of analytical questions that go beyond 'what' and ask 'how' and 'why' as these types of questions seek to explore, examine, clarify, dissect, reflect on and relate ideas. If nursing students are given the above types of questions during their examinations, they will be stimulated to think out of the box, hence fostering Critical thinking skills.

However, the study also revealed positive activities carried out by teachers using this method such as the asking of challenging questions (orally) the provision of hints and prompts, cautioning students against bad behaviours such as provoking those who provide wrong responses amongst others. These actions can foster CT in students. Moreover, the provision of hints and prompts serves in guiding the learner to further think about his/her responses &looking and analysing it from several directions or points of views. Furthermore, prompts also help in formulating questions that make connections to previous knowledge.

Several theories have also been used to expatiate on the interpretation of the findings. For instance, teachers focusing on certain students due to avoidance of wrong responses is considered a bad practice as Paul and Elder (2010) in their critical thinking stage theory stipulate that all reasoning has a purpose, it is based on assumptions and also done from some point of view and leads to somewhere or has implications and consequences. This implies that, teachers should rather try to get an understanding of why the student gives a wrong response and look further into their way of thinking. Moreover, teachers should be aware that not all students are at the same stage of thinking. Hence, opportunities should be given to every student to ensure that they progressively grow in their thinking.

Furthermore, based on Atkinson and Shiffrin (1968), information processing theory, information processing plays a great role in the acquisition of critical thinking. Students should be accorded sufficient 'wait' time before providing responses to questions asked. This is because, when a question is asked, the student needs some time to process the information and in so doing, he/she is in the process of trying to make connections between new and old information (prior knowledge or previously learnt material) and might have to retrieve information from the long-term memory. The learner takes actions and

decisions based on the information received.

In addition, Lev Vygotsky (1978) socio-cultural theory of cognitive development sheds lighter on the importance of hints and prompts in teachers' questioning skill via the concept of scaffolding and teaching at the zone of proximal development of the learner. He stipulates that learners develop their thinking skills through social interactions with a tutor or guide who can model behaviours or strategies of organizing knowledge and information. This therefore implies that with teachers' provision of hints and prompts, learners are stimulated to imagine, create and elaborate leading to higher mental functions and cognitive development via critical thinking.

A number of studies are either inline or differ from the findings of the current study. For instance, a study by Mahmud et al. (2021), revealed that prompting questions and clarification questions are effective at encouraging students to think critically when trying to solve mathematical problems. With regards to Bloom's taxonomy, these types of questions fall under the category of higher order thinking questions which effectively foster CT. It is therefore imperative for teachers to use such questions both orally and written if CT is the goal. In their study, Suryana et al. (2021), it was revealed that children's critical thinking skills are formed first through teachers' questioning skills which acted as mentoring principles and secondly by questions framed in open-ended question model. Their findings further highlighted the need for good questioning skills which involves aspects such as prompting, provision of sufficient 'wait' time before response, not focusing questions on particular students amongst others. Teachers must therefore possess these basic questioning skills.

The findings of the current study are also similar to that of a study by Mustika et al. (2020). The study revealed that the teachers used more of lower order thinking questions (63%) than higher order questions. Lower order thinking questions are related to recalling facts or understanding factual information and these types of questions do not stimulate students to think critically.Finally, the findings of a study by Sano (2014) differs with that of the current study as their findings revealed that teachers asked higher order questions more frequently and the teachers were aware of CT in their questioning behaviour. However, the study's finding corroborates with the current study with regards to students' reasons for their silence after some questions which included insufficient response time and fear of making mistakes. Teachers are therefore called upon to be conscious of CT in their questioning skills with the use of more of higher order questions, provision of sufficient wait time for students to reflect before responding and the creation of a friendly classroom atmosphere.

In a nutshell, when using the questioning method to effectively foster CT, teachers should: pose questions which require students to think before responding, motivate students to ask and respond to questions, provide hints and prompts as well as sufficient wait time and create an environment that stimulates curiosity without fear of making mistakes or being ignored or mocked.

CONCLUSION

The study has revealed many practice gaps such as focusing questions on particular students, avoiding wrong responses, and insufficient motivation of students to ask questions as well as asking mostly lower order thinking questions in examinations amongst others. It was therefore concluded that teachers' use of the questioning method was unfitting for the fostering of CT in nursing students. In this light it is recommended that authorities in charge of state registered nursing training schools should develop intermittent capacity building workshops for nursing teachers on teaching using the questioning method for the acquisition of critical thinking. Focus should be on teachers' questioning skills. In addition, directors of the various nursing schools should ensure that their teaching staffs attend these workshops and put the skills they have mastered into practice.

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