# Effect of Lecture Hall Debate as a teaching Strategy on Shaping Nursing Students' Critical Thinking Skills

*Eman A. Mohammed, ** Mona Ali Kunswa, *** Dalia A. Abdellatief

*Professor of Pediatric Nursing, **Lecturer of Pediatric Nursing and *** Assistant Professor of Medical Surgical Nursing, Faculty of Nursing, Ain Shams University, Cairo, Egypt.

*Abstract:* A debate is a discussion or structured contest about an issue or a resolution. Students who participate in debates have an opportunity to explore, listen, and enjoy learning. Debates give students additional opportunities to hear their classmates' views and to express opinions regarding topics that matter to them. They also help students make important decisions and become critical listeners. The informal debate helps students to work together to understand common problems. This study aimed to explore the effect of lecture hall debates as a teaching strategy on shaping nursing students' critical thinking skills. Research design: A quasi-experimental design was utilized to conduct to this study. Setting: The study was carried out in two different settings; in Medical Surgical department, 2nd grade and Pediatric department, 3rd grade affiliated to faculty of Nursing at Ain Shams University. Tools: (1) An interview questionnaire to determine students' knowledge regarding internet as a searching tool, and lecture hall debates, (2) An observation checklist to assess and guide the performance of the students' process of reading academic texts, researches journals, (3) An observation checklist for measuring student critically thinking in writing, (4) Critical thinking checklist for study success, (5) Tool internet of students critical thinking skills checklist, (6) Observation checklist for lecture hall debate and (7)Assessment of student's readiness to learn.

Results: There was highly statistically difference as regards students' knowledge and practice regarding class room debate and critical thinking pre and post application of program p (<0.05). Conclusion: there was significance improvement as regards students' knowledge and practice after application of the program regarding all items of critical thinking, performance of the students' process of critical reading and writing, effect of internet as a tool for searching and students' knowledge regarding class room debate. Recommendations: Prepare the students as active and creative citizens through developing the critical thinking skills during academic education.

*Keywords:* Critical thinking, Debate, Teaching strategy.

## 1. INTRODUCTION

Preparing students to be critical thinkers and effective communicators is essential in today's complex health care environment. In addition to sound psychomotor skills, future healthcare providers must possess the ability to communicate confidently and effectively, not only to their patients, but to a wide range of constituents such policymaker and payers, as well as other healthcare professionals. The teaching method of debate will prepare students with such skills. Debates have the ability to reinforce and enhance knowledge in a topic area, to engage students in the learning process, to verify the students have the ability to analyze, incorporate, and apply the literature to various situations, to heighten organization and listening skills, and to boost confidence when challenged on issues by others (**Zare & Othman, 2013**).

Debates have been defined as an educational strategy that fosters clinical reasoning and thinking skills as well as heightens awareness of attitudes, values and beliefs. Debates were incorporated in American higher education in the 19th thru the early 20th century, yet lost its appeal until the 1980s as a teaching tool to develop critical thinking, logic and communication skills *(Blazar et al., 2015)*.

Using debates in the classroom provide students the opportunity to work in a collaborative and cooperative group setting. By having students discuss and organize their points of view for one side of an argument they are able to discover new information and put knowledge into action. Classroom debates help students learn through friendly competition, examine controversial topics and "strengthen skills in the areas of leadership, interpersonal influence, teambuilding, group problem solving, and oral presentation" *(Leuser,1999)*.

Critical thinking is a pervasive skill that involves scrutinizing, differentiating, and appraising information and reflecting on the information gained in order to make judgments and inform clinical decisions. Studies inform us of the need for agreement on the approaches used to teach and measure critical thinking. Nurse prescribers undertake an advanced role that encompass the need to be able to make clinically based decisions about the appropriateness of a specific medication. This requires critical thinking attributes. A variety of teaching and learning approaches are offered which can be used by nurse educators to develop critical thinking skills in nurse prescribers *(Abid & Daniel, 2015)*.

The concept of critical thinking and its impact on nursing has been widely debated and as yet no discrete definition is available. Critical thinking is viewed as a "complex cognitive process requiring higher order thinking and application to decision- making in practice". Other pertinent aspects of critical thinking include, the "logical, reductionist, rule driven, decision making process, similar in character to the nursing process"        *(Blazar et al., 2015)*.

Use of debates as a teaching strategy that encourages active learning in the classroom, where students are interactively part of the learning process.  In a traditional classroom setting, a large percentage of what students are taught occurs via the lecture format and is typically framed by interactions between the clinician and patient. However, with debates, students must go beyond the passive nature of the lecture format to the dynamic nature of debating. Whereas, the lecture format allows students to receive and respond to instruction, debates require students to actively engage in the multidimensional teaching and learning of a topic area. Debating is dynamic because students must be thoroughly prepared to advocate their stance while at the same time simultaneously acknowledge the opposition's arguments, plan counter-arguments, and refute the opposition's claims with a logical line of thought. The activity of being able to consider the evidence, indifferent ways and under different conditions, helps to develop and promote critical thinking skills in students. Hence, debates move students beyond the memorization and superficial application of theories, techniques, and evidence to actively integrating and applying classroom materials under an array of situations and circumstances *(Doody, & Condon, 2012)*.

Debates differ from lectures, labs, discussion in that there are pre-arranged definitive sides to the issue: "for/affirmative" or "against/negative". Thus, it is not uncommon for students to have to debate the side of a topic they feel strongly against. For example, a student who strongly believes in the need for universal health care in the United States may have to persuade others that universal health care unnecessary. While not meant to alter one's fundamental belief system, these situations allow the student to weigh the pros and the cons of both sides by reflecting on their views while thoroughly investigating the "other" perspective in preparation for the debate *(Alasmari, & Ahmed, 2013)*.

Even though the literature supports debate as an effective experiential learning strategy, there are negative facets to debate. Preparation for debate can be labor intensive and daunting and may be a source of frustration on the part of the student. To minimize this frustration, the instructor should assure that students have adequate time to prepare or schedule debates during non-heavy test/assignment times. Because arguments in debates are either for or against, it is believed that debate will only argue the extremes and minimize the multifaceted aspects (the middle ground) associated with a topic **(Jonathan** & **Alan,  2018).**

According to *Speech and Debate Union, 2014,* debate is also an excellent way to develop critical thinking skills. The process of researching a debate is one of examining the pros and cons of an issue, determining what the problems are and considering alternative solutions. The research and presentation of a debate is clearly a team effort, and participation in activities like debate explicitly develops the skills needed to work in teams.

**Significance of the study:**

Debate is an important tool for an enriching learning experience, and using it as a teaching/learning approach brings a lot of benefits to learners. It offers teachers the chance to engage their students in a variety of activities that inspire students to explain, justify, convince and counter. Also, debate does not only help students deepen their comprehension of the issue/topic in question and foster their critical thinking abilities, but also, it helps them to enhance their language proficiency as well. Moreover, debate enables teachers to involve students in an engaging and cooperative learning process that facilitates the interaction of students with each other and with the content as well.

**Aim:**

The aim of this study was to explore the effect of lecture hall debates as a learning strategy on shaping nursing students' critical thinking skills. The aim of this study was achieved through the following objecties:

1. Assess the students' knowledge and practices regarding critical thinking before the intervention.

2. Planning and implementing of a debate program intervention.

3. Exploring the effect of debate program intervention on students' knowledge and practice post- intervention.

4. Evaluation of the effect of a debate program intervention on shaping student nurses critical thinking skills debate program intervention.

**Hypothesis of the study**

It was hypothesized that:

1. The studied group will have an improvement regarding students' knowledge and practice post application of debate program intervention.

2. The studied group will have an improvement regarding students' critical thinking in searching, reading and writing.

3. The studied group will have an improvement regarding the critical thinking skills.

## 2. SUBJECT AND METHOD

**Operational definition**

*Debates*: It is a teaching strategy allowed the researchers to create an environment that helps students move away from just receiving knowledge into an atmosphere of active participation and enhanced their different levels of critical thinking. The rival; he or she can make considerable strides in acquiring research competence, media, argument literacy, reading comprehension, evidence evaluation, scientific, speaking and civic skills.

*Critical thinking:* is the intellectually disciplined process of actively skillfully conceptualizing, applying, analyzing, synthesizing, and / or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication as a guide to belief and action.

**Research design:**

A quasi-experimental design was utilized to conduct to this study.

**Research setting:**

The study was carried out in two different settings; in Medical Surgical department, 2nd grade and Pediatric department, 3rd grade affiliated to faculty of Nursing at Ain Shams University.

**Research Subjects:**

A purposive sample was selected from 2nd grade, medical surgical department (30) assigned to pre and post studied groups as well as, students from 3rd grades namely in pediatric nursing department. There were selected according the following criteria: students' ages from 20 to 21 years old. Their educational level 2nd and 3rd grades of medical surgical nursing and pediatric nursing departments, students did not fail in their previous studied years in faculty , knowledgeable, they accepted to attended all educational theoretical and clinical sessions. As well as students committed to all tasks and duties from educational program executors.

**Tools of data collection:**

*The following tools were used for data collection:*

*1-An interview questionnaire* was developed and implemented by the researchers based on update and recent literature review and experts opinions in the light of relevant reference to determine students' knowledge regarding internet as a tool for searching, critical thinking and   lecture hall debates. It includes the following parts:

**A) The first part:** To assess characteristics of the studied nursing students namely age, gender, educational level, previous attendance of internet as a tool for searching and lecture hall debates programs.

**B) The second part:** To assess students' knowledge about internet as a tool for searching and lecture hall debate (definition, benefits, process, time consuming in debates, disadvantages of the both, source of information about debates, characteristics of who's to carry out the debates, scientific yield students and barriers to carry out the debates.

**C) The third part**: It concerning with critical thinking as definition, elements, aspects phases, levels, competencies and standards in addition, characteristics of critical thinkers and methods to shape students critical thinking.

*Scoring system*

The questionnaire format include 30 sub questions, four of them closed questions pertaining to the subjects socio-demographic characteristics. As well, 46 multiple choices, true and false and open ended questions as complete and essay pertaining to knowledge related to internet as a  tool for searching and lecture hall debates. Total marks of the knowledge questionnaire were 60 marks.

Answers were categorized on two-point scale ($\geq$ 60% of the score = correct answers and < 60 % of the score = incorrect answers.

*2) An observation checklist for measuring student critically thinking in reading,* it was adopted from *(Kirszner & Mandell, 1992)*, modified and filled by the researchers to assess and guide the performance of the students' process of reading academic texts, researches journals, and guidelines critically and analytically. It is consisted of 29questions stated in terms of actions and grouped under 22 main performance functions. The scoring system was weighted according to the relative importance of the function concerned as follows, what is the author's approach / perspective take (4) score, do you agree with the points the author is making (gets 2 score) are the points made by the author supported by evidence take (3 score). Does the write present opinion as fact (gets 2score), the author use valid reasoning assumption (gets 2 score), presentation of idea (gets 2score), make generalization unsupported, present ideas accurate take (2 score), use unfair persuasion tactics (gets 2score), presents a balanced picture of the issues ( gets 3 score), writer bias (gets 2 score), writers texts challenges against your value, assumption take (2 score), papers illustrated by graphs,  statistics (gets 3score), paper limitation (gets 2 score), methodology valid, are results consistent with objectives (gets 2 score), are diagram clear for reader (gets 2 score), the claim of author his or her research reliable. The satisfactory for a total grade $\geq$ 50 % of the maximum score is considered done correctly and unsatisfactory for a total grade < 50 % of the maximum score is considered (not done and incorrectly done).

*3) An observation checklist for measuring student critically thinking in writing,* this checklist adopted by *(Wilson, 2009)* to assess student critically thinking properly during their writing research assignment, case study and etc… It is included 53 items stated in term of actions and groups under four main practice function, the scores getting as the following critical thinking and logic getting 16 scores, working with sources was scored (9 score), writing was scored (14 score), research and scholarly skills get (14 score). The total score (53 grades). The satisfactory for a total grade $\geq$ 50 % of the maximum score is considered done correctly and unsatisfactory for a total grade < 50 % of the maximum score is considered (not done and incorrectly done).

*4) Critical thinking checklist for study success*. It is adopted by **Roy, and Macchiettee, (2005)** to assess students' practice critically thinking skills during their study pre / post program implementation. It included 17 practical questions grouped in four main action statements as identify what's important, evaluate what students find, look beyond what students' reading and hearing and clarifying students' point of view. Responses of students to the 17 practical questions (action statements) were put in 5- point likert scale including excellent (5 score), very good (4 score), good (3 score)

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average or satisfactory (2 score) and poor (1 score). The total level of students' properly critical thinking skills was evaluated as follows poor < 50%, from 50 to 64 was get pass, from 65 to 74 was get good, from 75 to ≤ 85 was get very good and > 85 was get excellent.

*5) Tool internet of students' critical thinking skills checklist*

It developed by *(Potter, 2010)* and modified by the researches to assess effect of a tool internet searching on students critical thinking skills. It compromised of 29 sub-items grouped into two main items as accessing prior knowledge (analysis, association, brainstorming, clarifying, comparing, contrasting and defining)

The checklist items were answered adequate take (2 scores), inadequate take (1 score) and not done take (zero). The total score were (58) points. The level of students was evaluated as follows; satisfactory (62 < 75), moderate (76 < 85) and high more than 85 and below 62 is considered not satisfaction.

*6) Observation checklist for lecture hall debate* by *(Snider, and Edwin, 2011).* it was utilized to evaluate the lecture hall debates practices by the students and its effect on their critical thinking. It includes seven main item respect of other team, information, rebuttal, use of facts / statistics, organization, understanding the topics and presentation style which divided into seven sub-items and students responses was classified into adequately take ( 2 scores), inadequately take (1 score) and not done take (zero). The total scores 14 scores, from 11 to 14 is considered competent and less than 11 is considered incompetent, the debate scale by *Snider, and Edwin, (2011).* It included (10) statements covering all items which the rival possess the students answers classified into in a 5 points likert scale including excellent (5 scores) very good, (4 scores), good (93 scores), satisfy ( 2scores) and poor (1score). The level of students was evaluated as follows; satisfactory (62 < 75), moderate (76 < 85) and high more than 85 and below 62 is considered not satisfaction.

*7) Assessment of student's readiness to learn*

- **Assessment motivation for learning**

This part of assessing motivation consisted of (10) statements were checked as "yes" or "no" answer. A yes answer got (1) score while the No answer got (0) score. The (5) statement scores are then added representing the total score

  - **0 < 5** → Not motivated.

  - **5 - 10** → Motivated.

- **Assessment of student's attitude toward learning**

It is a scale of (4) points assessment that were attitude, initiative, sharing ideas and response to advice. Each of which has (5) grades, organized so that the first statement indicated the least interest in learning while the fifth one indicated the highest interest in learning representing a total score ranging from 4 -20 with the following subgrades:

  - **4 - 7**   → Disinterested in learning (passive).

  - **8-11**   → Natural response (want to learn a little).

  - **12-15** →Motivated patient "want to learn all taught information

       & skills".

  - **16-20** → Enthusiastic. "wants to learn extra information".

This scale was adopted from *Yassin (2000), and Taylor, Lillis, and Le Mone, (2001)*

**Face and contents validity and reliability:**

The validity of study tool was ascertained by giving the instruments to juror expertise of this specialty that expressed their views and gave suggestions their scientific opinions in place of execution. *Testing reliability* of the proposed tools was done statistically by Crombach alpha test.

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**Ethical considerations and human rights**:

The aim of the research was explained to the participants. Verbal consent was obtained from each student to participate in the study, after clarifying the procedures of the study. Participants were informed about their right to refuse participation and to withdraw at any time without any consequences. Confidentiality of data was ensured.

**Pilot study**

A pilot study was carried out on 10% (6 students) of the total study sample to test study tools validity, flexibility and reliability. The pilot study was later exclude from study.

**Procedure:**

The objectives of this program are:

1- To permit the students to form opinions and engage with material beyond superficial level.

2- To support students with useful resources and tools to enhance their critical thinking.

3- To engage students and involve them in net process of looking at issues or problem from different points of views (debates).

4- Use students practice listening and speech skills and how to quickly analyze information for its validity.

5- Apply the critical thinking process that permits students to create solution for issue or problem and evaluate it's for their workability.

6- Utilize team work and group participation and allows. Commentary and discussion of the issues after word (debates).

7- Evaluate the effect of a tool internet searching and lecture hall debates in shaping students critical thinking.

8- To encourage students rely on themselves without interference from the researchers except guidance.

9- To engage students in interaction that lead to sharing information, problem solving and decision making.

-Based on the need and understand of the study students, the program contents were constructed based on predesigned study. Tools and it's consisted with recent literature.

-The study was implemented during first semester from first day of October 2016 up to end of February 2017. The objectives of the program and the natural of study were explained for studied as students through their orientation of the program contents in first session by researchers to direct students to carry the program contents.

-The theoretical part of the program presented in 2 sessions for a internet as a tool for searching which demanding several skills as defining the problem, searching for information, processing information, organization and presenting information which lead to inferential reasoning strategies and considered its feature of critical thinking and these sessions presented in lectures, discussions followed by subsequent reinforcement sessions of practice as (4 sessions ) case studies, verbal presentation, written and oral assignment reading and write research and students clinical log ( logs are simply records of how many patients' students has seen and what types of clinical experience they have had), linking theory and practice. Students were asked to search for special topics related to their nursing curriculum from internet to read, write and compare between theory and practice in essay and their students discussion and action were recorded and analyzed in the light of a tool internet checklist preprogram implementation then guided by researchers during carry out the program.

**I-** As regarding lecture hall debate procedures

1) Preparing students for the debates:

2) Researchers and students decide on a topic or issues related to their material being study, brain storming is one way to generate ideas.

3) When topic or issue was chosen, the students were divided into two groups.

4) Each group of students might be responsible for certain task. The students were introduced to the debate process were given an assignment sheet that outlined the debate process and instructions on preparing the case or topic brief. Students had time in and out of the lecture room to prepare for the debates (take 15-20 minutes) to prepare arguments.

5) Students who watch the debate on one occasion will have a chance to be the debaters (rival) next time.

**II-** Performance of the debates:

Some guidelines of informal debate follow:

a- Students choose presenters for each of the arguments.

b- The presenters speak in turn, after each member on the other side makes a point.

c- Student should be sure not repeated arguments previously presented and ensure that a recorder is making a list of all points being made.

d- Debaters must remember to focus on the arguments, not the participants who listen to the debate.

e- Students from both sides have been presented and researchers led discussion were take place.

f- Every valid and original argument made by each group should receive a mark.

G- The group with the greatest number of marks wins ( it is not necessary to declare) a winning group for informal debate.

Post the informal debate:

Students may ask to write the combination of factors as strength of analysis, organization, evidence, defense of idea, challenging of the information delivery.

Finally, the researchers filled out the debate from scales; the session was divided into one theory (30 and one practice 1 hour).

**III-** Critical theory sessions which include one theory 30 hours and 2 sessions for practice using these methods case study, clinical log, students led round (students gather relevant data, prioritizing it, developing nursing diagnosis, analyzing the meaning of data and distinguishing facts from inference) all these methods enhanced their critical thinking skills and shape their its properly. Multimedia was used as video tape, data show, and computer for searching, leaflets and proceeding form. The program contents, sessions, teaching methods and media were formulated and organized into an instructional plan.

Critical thinking lecture was included, definition levels, competencies, standards, types, using its in nursing, challenges to conducts the critical thinking in academic and health sitting in nursing.

**-Evaluation of the program** was completed using therefore mentioned tools/ pre and post. Hence, most of the teaching sessions (theoretical covers 15 students and practice included, students and repeated all sessions to meet all studied students. This program was consumed short time because the researchers teach the students in their departments and easy to their collection of students in their free time also exposed students to important topics in their curricula and new methods of teaching (debate) which evoke students' curiosity and interest.

**3-Administrative design:**

An official permission from medical surgical nursing department and pediatric nursing head of department was obtained. As wells students were selected from previous sittings were met and oral consent was obtained, moreover all students were informed about the aim and nature of the study.  As well as to get better cooperation during the implementation phase. It was important to have their full support, especially to encourage students to participate positively in the study.

**4-A statistical design:**

*Statistical methods for data analysis*

The data collected were organized, sorted, tabulated and analyzed using Statistical Package for Social Sciences (SPSS). They were presented in tables and charts using numbers, percentages, means, standard deviations   , t – test and r - test. Level of significance was threshold at 0.05.

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**Table (1): Distribution of the Studied Subjects According to Their Characteristics**

| Subjects' Characteristics | Studied Subjects [No. = 60 (100%)] | |
|---|---|---|
| | **No.** | **%** |
| **Age (Years)** <br><br> 19- >20 <br> 20 ≥ 21 | <br><br> 27 <br> 33 | <br><br> 45 <br> 55 |
| $\overline{X} \pm SD$ | **20. 3 ± 0.745** | |
| **Gender** <br> Male <br> Female | <br> 22 <br> 38 | <br> 36.7 <br> 63.3 |
| **Academic year** <br> 2nd <br> 3rd | <br> 30 <br> 30 | <br> 50 <br> 50 |
| **Department** <br><br> Medical Surgical department <br> Pediatric Nursing department | 30 <br> 30 | 50 <br> 50 |

Table (1) shows that more than half (55%) of studied students' age ranged from 20 ≥ 21 years with $\overline{X} \pm SD = 20. 3 \pm 0.745$. Regarding gender of studied students, less than two thirds (63.3%) of them were females.

**Table (2): Mean Scores of Studied Students' Knowledge Regarding Internet and Critical thinking skills Pre and Post Application of the program.**

| Students' Knowledge | Studied Subjects [No. = 60 (100%)] $\overline{X} \pm SD$ | Paired t-test | P- value |
|---|---|---|---|
| **Definition of internet.** <br> - Pre <br> - Post | 0.81 ±0.69 <br> 1.6±0.51 | -9.205 | 0.000 |
| **Advantages of internet as a method of knowledge searching.** <br> - Pre <br> - Post | 1.15± 1.08 <br> 3.11± 0.79 | -9.295 | 0.000 |
| **Disadvantages of internet using** <br> - Pre <br> - Post | 2.17± 0.69 <br> 3.16± 0.69 | -8.320 | 0.000 |
| **Definition of Critical thinking.** <br> - Pre <br> - Post | 0.67±0.48 <br> 2.67± 0.47 | -13.30 | 0.000 |
| **Steps of Critical thinking.** <br> - Pre <br> - Post | 1.83±1.08 <br> 3.50±0.96 | -27.15 | 0.000 |
| **Skills of Critical thinking.** <br> - Pre <br> - Post | 0.83±0.69 <br> 3.0± 0.82 | -13.72 | 0.000 |
| **Characteristics of Critical thinking.** | 2.33±0.75 | -16.35 | 0.000 |

| | | | |
|---|---|---|---|
| - Pre<br>- Post | 4.33±0.75 | | |
| **Characteristics of Critical thinkers.**<br> - Pre<br>- Post | 1.7±0.95<br>4.17±1.07 | -9.16 | 0.000 |
| **Steps of decision making**<br> - Pre<br>- Post | 2.33±0.75<br>6.16± 1.35 | -24.24 | 0.000 |
| **Role of the nursing for application of Critical thinking.**<br> - Pre<br>- Post | 1.83±0.69<br>3.83±0.67 | -13.42 | 0.000 |
| **Total Students' knowledge**<br>- Pre<br>- Post | 15.65±2.31<br>31.53±3.06 | -25.61 | 0.000 |

**P < 0. 000 (Highly Statistical Significant Difference)**

As clarified from table (2) there was a significant improvement in the Students' knowledge after application of the program regarding all items of knowledge related to critical thinking with highly statistical significant difference (P < 0.000). As well as, the total mean score of students' knowledge was 15.65±2.31 before program application compared to 31.53±3.06 after program application that reflects highly statistical significant difference (t test = -25.61 with p < 0.000).

**Table (3):  Mean Scores of Studied Students' Knowledge Regarding Class Room Debat Pre and Post Application of the program.**

| Students' Knowledge | Studied Subjects [No. = 60 (100%)]<br>$\overline{X} \pm SD$ | Paired t-test | P- value |
|---|---|---|---|
| **Definition of class room debate.**<br> - Pre<br>- Post | 0.33  ± 0.47<br>2.67± 0.47 | -21.72 | 0.000 |
| **Benefits of class room debate.**<br> - Pre<br>- Post | 1.33±0.75<br>3.17± 1.08 | -13.19 | 0.000 |
| **Number of persons in class room debate**<br> - Pre<br>- Post | 0.33± 0.47<br>3.67 ± 0.47 | -21.72 | 0.000 |
| **Advantages of class room debate.**<br> - Pre<br>- Post | 1.50± 0.96<br>3.67 ± 0.95 | -24.21 | 0.000 |
| **Total Students' knowledge**<br> - Pre<br>- Post | 3.49±0.65<br>17.18±1.13 | -15.16 | 0.000 |

**P < 0. 000 (Highly Statistical Significant Difference)**

As observed  from table (3) there was a significant improvement in the Students' knowledge after application of the program regarding all items of knowledge related to class room debate with highly statistical significant difference (P < 0.000). As well as, the total mean score of students' knowledge was 3.49±0.65 before program application compared to 17.18±1.13 after program application that reflects highly statistical significant difference (t test = -15.16 with p < 0.000).

**Table (4) Mean Scores of the effect of internet as a tool for searching on developing students' sound critical thinking skills.**

| Items | Studied Subjects [No. = 60 (100%)] $\overline{X} \pm SD$ | Paired t-test | P- value |
|---|---|---|---|
| **Using scientific reference in searching.**<br>- Pre<br>- Post | 1.33 ± 0.54<br>2.78 ± 0.41 | -17.31 | 0.00 |
| **Use the nursing process for solving patient's problem.**<br>- Pre<br>- Post | 1.15 ± 0.36<br>2.78 ± 0.41 | -22.94 | 0.00 |
| **Assess patient's problem systematically.**<br>- Pre<br>- Post | 1.17 ± 0.37<br>2.78 ± 0.42 | -22.56 | 0.00 |
| **Set priorities systematically.**<br>- Pre<br>- Post | 1.20 ± 0.44<br>2.75 ± 0.44 | -18.49 | 0.00 |
| **The act is based on data and knowledge.**<br>- Pre<br>- Post | 1.13 ± 0.34<br>2.73 ± 0.45 | -22.19 | 0.00 |
| **Using available resources wisely.**<br>- Pre<br>- Post | 1.30 ± 0.46<br>2.67 ± 0.48 | -15.97 | 0.00 |
| **Apply standard of care.**<br>- Pre<br>- Post | 1.22 ± 0.45<br>2.75 ± 0.44 | -16.40 | 0.00 |
| **Use technology and equipment in patient's care.**<br>- Pre<br>- Post | 1.10 ± 0.30<br>2.70 ± 0.46 | -23.50 | 0.00 |
| **Give patient – family centered care.**<br>- Pre<br>- Post | 1.35 ± 0.48<br>2.83 ± 0.37 | -19.27 | 0.00 |
| **Total Mean Score of Assessment sheet on students developing sound critical thinking**<br>- Pre<br>- Post | 10.95 ± 1.67<br>24.78 ± 1.35 | -46.57 | 0.00 |

It is clear from table (4) that, there was a significant improvement in the Students' sound critical thinking skills after application of the program with highly statistical significant difference (P < 0.000). As well as, the total mean score of students' knowledge was 10.95 ± 1.67 before program application compared to 24.78 ± 1.35 after program application that reflects highly statistical significant difference (t test = -46.57 with p < 0.000).

**Table (5) Total Mean Scores of Studied Students Performance regarding Critical Reading in Reading Academic Texts and Researches Journals**

| Items | Studied Subjects [No. = 60 (100%)] $\overline{X} \pm SD$ | Paired t-test | P- value |
|---|---|---|---|
| Class work<br>- Pre<br>- Post | 21.02 ± 1.79<br>53.05 ± 2.67 | -78.20 | 0.000 |
| Home work<br>- Pre<br>- Post | 6.46 ± 1.03<br>16.32 ± 1.17 | -47.90 | 0.000 |

As noticed from this table (5), there was a significant improvement in the Students' process of critical reading in reading academic texts and researches journals in class work and home work after application of the program with highly statistical significant difference (P < 0.000). As well as, the total mean score was 21.02 ± 1.79 and 6.46 ± 1.03 before program application compared to 53.05 ± 2.67 and 16.32 ± 1.17 after program application that reflects highly statistical significant difference (t test = -78.20 and -47.90 with p < 0.000).

**Table (6) Mean Score of Critical Thinking Checklist for Study Success of Students' Practice Critically Thinking Skills Pre / Post Program Implementation.**

| Items | Studied Subjects [No. = 60 (100%)] $\overline{X} \pm SD$ | Paired t-test | P- value |
|---|---|---|---|
| **Student able to Identify why critical thinking is important**<br>- Pre<br>- Post | 2.17± 0.69<br>6.90 ± 1.65 | -20.55 | 0.000 |
| **Student able to Evaluate what he/she find**<br>- Pre<br>- Post | 7.83 ± 1.35<br>14.50 ± 2.08 | -21.22 | 0.000 |
| **Look beyond what he/she is reading/hearing**<br>- Pre<br>- Post | 3.50 ± 1.51<br>6.60 ± 1.44 | -11.58 | 0.000 |
| **Clarifying his/ her point of view**<br>- Pre<br>- Post | 3.33 ± 0.95<br>8.70 ± 1.20 | -26.80 | 0.000 |
| **Total**<br>- Pre<br>- Post | 16.83 ± 3.21<br>36.70 ± 4.44 | -27.93 | 0.000 |

It is clear from table 6 that, there was a significant improvement in the Students' practice critically thinking skills after application of the program with highly statistical significant difference (P < 0.000). As well as, the total mean score was 16.83 ± 3.21 before program application compared to 36.70 ± 4.44 after program application that reflects highly statistical significant difference (t test = -27.93 with p < 0.000).

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**Table (7) Mean Scores of Studied students' debate practice pre / post program implementation.**

| Items | Studied Subjects [No. = 60 (100%)] $\overline{X} \pm SD$ | Paired t-test | P- value |
|---|---|---|---|
| The speakers' statements clearly supported their position in the debate.<br>- Pre<br>- Post | 0.58 ± 0.49<br>3.63 ± 0.48 | -32.67 | 0.00 |
| The speakers' statements appeared to be well researched and documented.<br>- Pre<br>- Post | 0.52± 0.50<br>3.65 ± 0.48 | -34.65 | 0.00 |
| The speakers addressed the opposing team and made appropriate eye contact.<br>- Pre<br>- Post | 0.53 ± 0.50<br>3.67 ± 0.47 | -35.92 | 0.00 |
| Arguments were presented with clarity and appropriate volume.<br>- Pre<br>- Post | 0.53 ± 0.50<br>3.63 ± 0.48 | -34.01 | 0.00 |
| Speakers were well rehearsed with minimal reliance on notes.<br>- Pre<br>- Post | 0.48 ± 0.50<br>3.73 ± 0.44 | -38.48 | 0.00 |
| Rebuttals were specific to opposing arguments and expressed with clarity.<br>- Pre<br>- Post | 0.45 ± 0.50<br>3.66 ± 0.47 | -37.40 | 0.00 |
| Rebuttals showed evidence of good listening skills.<br>- Pre<br>- Post | 0.50 ± 0.50<br>3.67 ± 0.47 | -39.86 | 0.00 |
| Concluding arguments and statements were effective and convincing.<br>- Pre<br>- Post | 0.46 ± 0.50<br>3.53 ± 0.50 | -32.38 | 0.00 |
| Speakers adhered to the rules of the debate.<br>- Pre<br>- Post | 0.50 ± 0.50<br>3.57 ± 0.49 | -34.64 | 0.00 |
| The overall collective effort of the debate team was effective.<br>- Pre<br>- Post | 0.55 ± 0.50<br>3.46 ± 0.50 | -33.65 | 0.00 |
| Total<br>- Pre<br>- Post | 5.11± 1.75<br><br>36.22±1.64 | -104.52 | 0.00 |

Table 7 shows that, there was a significant improvement in all items of students' debate practice after application of the program with highly statistical significant difference (P < 0.000). As well as, the total mean score was 5.11± 1.75 before program application compared to 36.22±1.64 after program application that reflects highly statistical significant difference (t test = -104.52with   p < 0.000).

**Table (8) Mean score of studied students' Critical thinking skills pre and post program implementation.**

| Items | Studied Subjects [No. = 60 (100%)] $\overline{X} \pm SD$ | Paired t-test | P- value |
|---|---|---|---|
| **I. Communication** Define problem in your own words. - Pre - Post | 1.12 ± 0.78 3.50 ± 0.67 | -15.27 | 0.000 |
| **II. Analysis** Compare & contrast the available solutions. - Pre - Post | 1.23 ± 0.74 3.41 ± 0.59 | -15.64 | 0.000 |
| **III. Problem Solving** Select & defend your chosen solution. - Pre - Post | 0.88 ± 0.71 3.77 ± 0.42 | -25.24 | 0.000 |
| **IV. Evaluation** Identify weaknesses in your chosen solution. - Pre - Post | 1.48 ± 0.50 3.78 ± 0.41 | -30.15 | 0.000 |
| **V. Synthesis** Suggest ways to improve/strengthen your chosen solution. - Pre - Post | 0.98 ± 0.67 3.70 ± 0.46 | -25.49 | 0.000 |
| **VI. Reflection** Reflect on your own thought process. "What did you learn from this process?" "What would you do differently next time to improve?" - Pre - Post | 1.25 ± 0.57 2.83 ± 0.78 | -15.16 | 0.000 |
| **Total** - Pre - Post | 6.95 ± 1.67 21.00 ± 1.46 | -46.66 | 0.000 |

Table 8 shows that, there was a significant improvement in all items of students' practice critical thinking skills after application of the program with highly statistical significant difference (P < 0.000). As well as, the total mean score was 6.95 ± 1.67 before program application compared to 21.00 ± 1.46 after program application that reflects highly statistical significant difference (t test = -46.66 p < 0.000).

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**Table (9) Distribution of studied students Readiness for Learing through Using Debate as a Teaching Strategy in The Class Room pre and post Application of the program.**

| Items | Study group (n=60) | |
|---|---|---|
| | **No** | **%** |
| ❑ **Motivation for learning:** | | |
| • Motivated | 51 | 85 |
| • Not motivated | 9 | 15 |
| ❑ **Attitude toward learning:** | | |
| • Passive | 3 | 5 |
| • Natural response | 6 | 10 |
| • Motivated | 40 | 66.6 |
| • Enthusiastic | 11 | 18.3 |

This table was held to assess readiness to learning among the studied group subjects and it shows that, the majority of the studied group (85%) were motivated to learning, more than two third (66.6%) of their attitude toward learning were motivated.

## 3. DISCUSSION

Higher order thinking skills like critical thinking, creative thinking and problem solving are considered necessary skills for 21st century individual. On the other hand, technology competencies like using the internet and its services effectively and learning in online environments are also skills required for the new regeneration *(Kalelioglu & Gulbhar, 2014)*. Critical thinking skill is an important skill for developing critical thinkers, it is fundamental for good education.  Critical skills are necessary in order to function as engaged and active citizens of our world *(Abdullah, 2014)*. In **addition *Charrois & Michelle, (2013)*** stated that using debate strategies as a conceptual starting point, educators can help their students become superior critical thinkers. Preparing a classroom for one-on-one debates to improve critical thinking skills involves understanding the topic as well as other factors that affect audience perception.

In the present study as regards students' knowledge and practice related to critical thinking, there was significance improvement after application of the program regarding all items of critical thinking. This result may be  interpreted as education has a vital role in improving students` knowledge and practices. This  finding  was supported by **Yildirm (2010)** there was statistically significant difference between posttest scores ($p<0.05$); it is seen that the discussing group had moderate level and control group had accepted level scores. Also this study in similar with **Facione (2016)** results, there was improvement in students' critical thinking knowledge.

In the same context, *Yildirim & Ozkahraman, (2011)* emphasized that Critical thinking help the student nurses use analysis, questioning, interpretation, reflection to resolve patient care and make a decision making independently. *National Academy science, 2012*, emphasized that through studies the critical thinking give academic students more empowering in ability to access, analyze, flexibility, revise plans and evaluate information.

As regards performance of the students' process of critical reading and writing, the study findings there were significant improvement after application of program. This result may be due to critical thinking has been positively associated with active learning strategies and help student read and read and correct writing was done. In similar with *(Moseley et al, 2005)* who stated that there were significantly correlated to academic achievement between critical thinking and writing the assignments. Also *Mohammed, (2017)*  stated that the students read the material from multiple sources and wrote an argumentative essay composed the most integrative essays with the most causal connections.

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In relation to effect of a tool internet for searching the present results indicated that significant improvement after program application reflects highly statistical significant difference between pre and post program on students developing sound critical thinking skills. According *(Abdullah, 2014)* who stated that there were statistically significant differences between the experimental group and the control group in favor of the experimental group. This study findings which considered the internet-based environment to enhance critical thinking skills at the university level. The students use internet, the students perform more the active, critical thinking with continuous support and feedback from other students and the teacher.

In addition *Milson (2012)* discovered that the students considered internet-based courses as rich environment for the development of critical thinking skills and that there are learning activities that can boost those skills.

As regards students' knowledge regarding class room debate, there is significant improvement after application of the program. *Facione (2016)* emphasized that there is a significant improvement in students' knowledge, skills and dispositions on pretest and posttest scores after direct instruction and applying the debate method.

There is a significant correlated between using a debate method and improve professional student's standard of practice, stimulate inquiry, encourage sound reasoning in practice and contribute to personal and professional development. Using of debate help in developing critical thinking skills and students become more actively learning and the degree to which students interact with instructors and each other.

*Scott, (2010)* clarified that most students were highly satisfied with the debate process and felt that the debates increased their critical thinking skills. The use of debates is an excellent environment to increase critical thinking with a science and technology. There is a significant improvement through critical thinking and debate method in providing students with written assignments, care plans, case studies, group discussions or problem-solving exercises.

*Yang (2008)* Saied that the development of critical thinking through debaters work together in teams. Each team is given the opportunity to offer arguments and direct questions to the opposing team, judges then offer constructive feedback. Students using the debate method work patterns and communication become collaborative rather than competitive.

Finally, as regards students' readiness to learning among the studied group subjects, one of the interesting findings of this study revealed that, the majority of the studied group were motivated to learning, and more than two third of their attitude toward learning were motivated. This result may be due to active participation and engaged of student in classroom and become have ability to think critically, communicate, solve the health problems and able to discuss in scientifically way.

The previous results are in the same line with *Judith, Julie & Melind, (2017)* who stated that the finding reflects that active learning in classroom as debate improve student critical thinking and more motivated because active participation and engaged in classroom and increase competition inspires continued motivation to engage. This cycle supports improved student achievement.

Also according *Firm & Depra (2015),* who clarified that some students' reactions to learning of debate as 55% of student studied able to solve the problem, 50% develop communication skills, 60% able to think critically, challenge teachers to incorporate new and relevant content and promote collegiality and competition through appropriate language.

## 4. CONCLUSION

The current study concluded that there was significance improvement after application of the program regarding all items of critical thinking, performance of the students' process of critical reading and writing, effect of a tool internet for searching and students' knowledge regarding class room debate.

## 5. RECOMMENDATIONS

-Use a new strategy in teaching to deliver quality curriculum more consistently.

-Integrate curriculum more and eliminate redundancies.

-Use debate method as a teaching and learning strategy.

-Provide ongoing professional development for teachers.

-Prepare the students as active and creative citizens through developing the critical thinking skills during academic education.

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