CHAPTER IV

DATA EXERCISE

TEACHING & LEARNING CONDITION
TO PROMOTE CRITICAL THINKING SKILLS AT
BOROMARAJONANI COLLEGE OF NURSING, SUPHANBURI PROVINCE

4.1   Introduction

As was written in Chapter II that how significant of critical thinking skills could affect to nurses. The nursing college, under Praboromarajanok Institute, Ministry of Public Health take the role of arranging education for nurse and health personal to serve need of peoples' health. In the present complex society, health problems are changing, and many factors could be affects. To work effectively nurse must have the ability on decision making and problem solving, which must related to critical thinking. As Mumm, A.M.; Kersting, R.C; (1997) wrote that to work as a nurse in direct practice rely on critical thinking to apply theories, make information decisions, and explain their assessment and decision. Bandman, E.L.; and Bandman, B. (1988 cite in Chaiprasit, S. 1999) noted that the critical thinking could promote the using of nursing process because have to use the scientific reasons. Teacher should consider the important of

critical thinking and should develop it to nursing student in order to be the quality

health care provider and providing effective and good care to social.

The critical thinking is the developing skills by arranging appropriate education

program or situation and learning experience. From studied the situation of education

program in nursing college under Praboromarajanok Institute (Jansangrat, S. 1994:28)

found that teaching-learning activities are lecture, demonstration, and laboratory.

Students mostly cannot follow lecture because of too much content. This teaching

activity obstacle to develop critical thinking skills, as Paul (1992) said teaching

students' rote memorization of facts from lectures and textbooks is the type of lower-

order learning, undisciplined, associative, and inert.

Therefore I am interesting to determine the level of critical thinking skills in

nursing student, the teaching-learning factors related to develop critical thinking skills:

teachers, students, instructional, and teaching & learning environment at

Borommarajonani college of nursing, Suphanburi province.

4.2   Conceptual Framework

From review literatures, the important factors of teaching and learning condition

with related to develop critical thinking skills were compose of 5 aspects

1.) Curriculum

2.) Learners: the attitude of learner is important to promote critical thinking for example: the curiosity, maturity, actively to learn & to search for information, self-confidence, etc.

3.) Teachers: teachers should be the good model of critical thinker, arranging teaching activities and Teaching-learning methodology to promote critical thinking, to encouraging, supporting, understanding, and listening their student s' opinion.

4.) Teaching method and strategies

5.) Teaching environment: Environment to promote critical thinking for example; friends, classroom & laboratory room, library, others facilities which can encourage and promote students to practice their thinking.

Therefore, I would like to determine these factors as based on the teaching and learning system: the first, input, as composes of curriculum, teachers, students, and teaching environments, the second, process, as the teaching methodology and strategies, and the third, output, as the critical thinking skills (as shown in figure 4.1).

Figure 4.1   Conceptual Framework: Factors relating to critical thinking skills

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┌─────────────────────────┐
│ *Personal data          │
│                         │
│   -   sex               │
│   -   students' classes │
│   -   GPA               │
│   -   age               │
└─────────────────────────┘
                               ┌──────────────────────────────────┐
                               │ Critical thinking skills 5 aspects │
                               │                                    │
                               │ - Inferences                       │
                               │                                    │
                               │ - Recognition of Assumption        │
                               │                                    │
                               │ - Deduction                        │
┌─────────────────────────┐   │                                    │
│ Teaching-learning        │   │ - Interpretation                   │
│ condition               │   │                                    │
│                         │   │ - Evaluation of Arguments          │
│ 1. Curriculum.          │   │                                    │
│                         │   └──────────────────────────────────┘
│ 2. Students' learning   │
│    behavior             │
│                         │
│ 3. Teachers             │
│                         │
│ 4. Teaching methodology │
│                         │
│ 5. Teaching environments│
│                         │
│        -   Friends      │
│        -   Classroom and│
│            laboratory   │
│        -   Library      │
│        -   Others facilities│
└─────────────────────────┘
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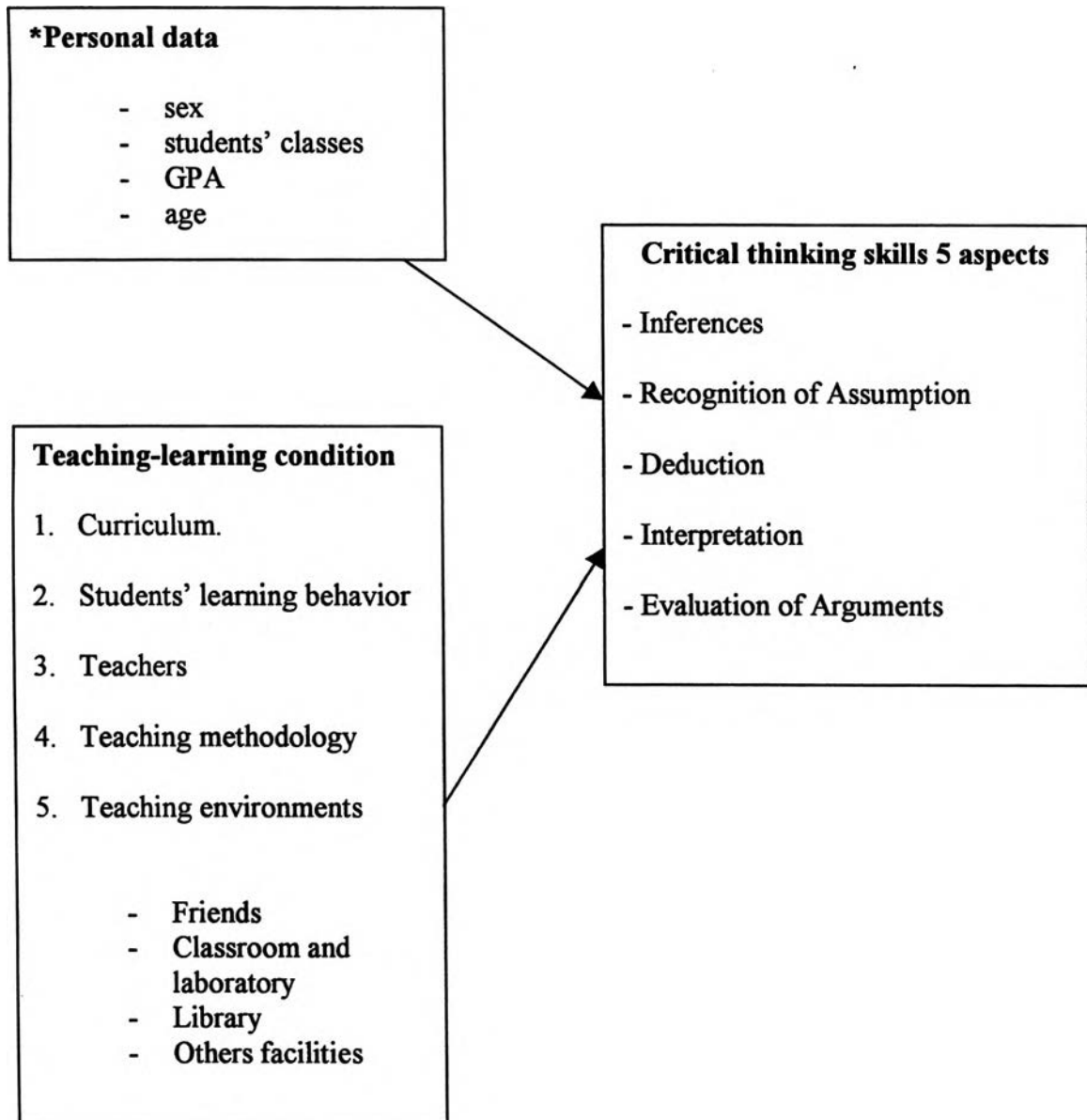
4.3 Objectives

1. To determine the critical thinking skills of nursing students

2. To explore the conditions of teaching - learning that can promote critical thinking in nursing students at Boromarajonani college of nursing Suphanburi province.

4.4 Methods

4.4.1 Population of study

Population: in this study are nursing students who are studying on the 1st year, 2nd year, and 3rd year of semester 2, academic year 2001, at Boromarajonani College of Nursing Suphanburi compose of:

The 1st year nursing student	40	people
The 2nd year nursing student	50	people
The 3rd year nursing student	47	people
Total population	137	people

In this study did not included the 4th year students because they were studying at field work during the time of collecting data both inside and outside of Suphanburi province.

4.4.2 Data collecting method

The descriptive and qualitative study were design to gather all information necessary for the project. The structure questionnaire were used to collect data on the condition of teaching-learning that can promote critical thinking, The Watson & Glaser Critical Thinking Appraisal (WGCTA) was used to measure the critical thinking skills of nursing student. Group interview and in depth interview were design to gather qualitative data.

Descriptive study

1. **The instruments to collect data using structured questionnaire which compose of 2 parts.**

   Part I   Personal data: age, sex, GPA, and classes

   Part II   The condition of teaching-learning to promote critical thinking. Using Likert-type 5 scales, checklists were designed a descriptive studies 5 areas, total questions were 68 items composes of 5 parts: curriculum (8 items), students' learning behaviors (18 items), teachers (16 items), teaching method and strategies (4 items), and teaching & learning environments (22 items)

The criteria of evaluation 5 scales

In the positive item; questions number 1.1-3.8, 3.10-3.11, 3.13, 3.16-5.22

Lowest	equal to	1	score
Low	equal to	2	score

Moderate	equal to	3	score
High	equal to	4	score
Highest	equal to	5	score

In the negative items; number 3.9,3.12,3.14,3.15

Lowest	equal to	5	score
Low	equal to	4	score
Moderate	equal to	3	score
High	equal to	2	score
Highest	equal to	1	score

The total score for all 5 part will be divided into 3 levels high, moderate, and low level of Bloom's criteria (Bloom, 1975). As shown below.

$\geq 80\%$	equal to	high level
40 – 79.9%	equal to	moderate level
< 40%	equal to	low

2. **Measuring of critical thinking skills:**

Using the Watson & Glaser Critical thinking Appraisal (WGCTA) was translated to Thai language by Kanoknut Khampak,(1996) . Measuring critical thinking skills 5 aspects:

part	1) Inferences	16	items
part	2) Recognition of assumption	16	items
part	3 Deduction	16	items
part	4) Interpretation	16	items

part   5) Evaluation of Argument   16   items

Total   80   items

Criteria to giving score of every aspects:

If answer correct   give   1   score

If answer incorrect   give   0   score

Scoring of critical thinking skills measures:

- **Part 1 Inference:**

Inference is to consider of the possibility of the conclusion from the evidence that got from observation and from general knowledge. The questions total were 16 items, using of 6 situations on general knowledge, After the given situation, it will provide conclusion in the different possibility, then the examiners have to considering the possibility of true or false of that conclusion by choosing 5 choices as following:

Choose number   1   mean   true

Choose number   2   mean   should be true

Choose number   3   mean   not enough information

Choose number   4   mean   should not be true

Choose number   5   mean   not true

- **Part 2 Recognition of Assumptions:**

It is to consider the quotation that already agreed or hidden to understand. The questions total were 16 items using situation in general knowledge. After the given

situations will provide quotation. Examiners have to answer if that quotation Ist is the recognition of assumption or that quotation is not the recognition assumption from the given situations, there are 2 answer:

Choose number 1 mean that quotation is the recognition of assumption.

Choose number 2 mean that quotation is not the recognition of assumption.

- **Part 3 Deduction:**

It is to consider to take out of the conclusion from the given situation that the conclusion is necessary and fix from the evidences. The questions total were 16 items through 6 situations compose of 2 main quotations. After each situation will be the conclusion which the examiners have to consider that is the conclusion of that quotation or that is not the conclusion of that quotation; and considering to choose;

Choose number 1 mean That is the conclusion of that main given quotation.

Choose number 2 mean That is not conclusion of that main given quotation.

- **Part 4 Interpretation:**

It is the considering to conclusion from the information or evidence that already provide enough information by that conclusion. And it is not necessary to take out from the fixing evidence. The questions were in short articles in general knowledge through 7 situations. After each article will be the conclusion; considering to choosing 2 answers:

Choose number 1   mean   that conclusion is true from the given stories.

Choose number 2   mean   that conclusion is not true from the given stories.

- **Part 5 The Evaluation of Argument**

It is to consider the correctness of the infer reasoning. If that is the important reason or directly involve to the given situation. The questions total were 16 items. It will start with the question on general knowledge. After each question will be the argument. Considering to choosing from 2 answer:

Choose number 1   mean   It is the strong argument, important and relation to question.

Choose number 2   mean   It is the strong argument, but not important and not relation to question.

The evaluation of critical thinking skills: If total score;

$\geq 80\%$ equal to critical thinking skills of that student is in high level

50-79.9%   equal to critical thinking skills of that student is in moderate level

$\leq 50\%$ equal to critical thinking skills of that student is in low level

Interpretation: questions 16 items:

≥ 12 scores   equal to critical thinking skills of that student is in high level

8-11 scores   equal to critical thinking skills of that student is in moderate level

≤ 5 scores   equal to critical thinking skills of that student is in low level

The instruments used in this study derived from the research project studied on the condition of teaching-learning that promote critical thinking skills of students in Central College, Praboromarajanok Institute, Ministry of Public Health. The structure questionnaire were try out with nursing student, Prapokkroa Jantaburi Nursing College 40 students, 10 students of each year, from 1st year, 2nd year, 3rd year, and 4th year by using Cornbarch Coefficient Alpha, the reliability .8947. The Watson-Glaser Critical Thinking Appraisal were translated in to Thai language by Kanoknut Khampak (1994), have been test language and interpret meaning by the expert, using Kuder and Richardson (K-R 21) reliability .7338

Qualitative data

- Group interview

This method was decided to gather information from the 1st year, the 2nd year, and the 3rd year students on the teaching-learning approach, in the classroom and their learning behavior. Example of questions asked: what is the main teaching technique that teacher usually using in classroom? What do you think about this teaching-learning approach? An example question asking about the students' learning behaviors: did you ever ask any questions in the classroom? Or did you ever share your idea or opinion in the class?

Group interviews were conducted in Boromarajonani College of Nursing, Suphsnburi on 22nd of November 2001 (13.00-16.00). There are consist of 3 participants of each year student, (1st year,2nd year, and 3rd year) selected randomly by

available and cooperative. The discussion went for about an hour of each group. Outline of the discussion was prepared in Thai language (see appendix for English).

- In-depth interview

This method used in order to collect information from teachers (2 teachers). Main contents are asking about the learning behavior if students as they observe while they are learning, in the class .The educational program held by college of each year. And asking specific about how do they think about teaching critical thinking in their classroom. Do they ever apply teaching critical thinking in class? And what teaching method they widely used in their class? Are their students active to learn? Are they asking question and sharing ideas in the class.

And asking specific about have teachers ever taken training program on teaching critical thinking.

4.5 Data Collecting Technique

1. Consulting with my advisor on; the area of study, what data should be collect, how to collect, what method should be use.

2. After suggestion from advisor, the review all information take place.

3. Talking causally with other teachers, then prepares tools

4. Send paper to the director of Boromarajonani College of Nursing Suphanburi. In order to asking for permission to collecting data.

5. Coordinate with teachers who take care of students of Boromarajonani College of Nursing to explain the objective of this collecting data, the objective of research and asking for permission.

6. Explain to teachers who will assist to collecting data on the objective of research, detail of each parts and a 45 min time – Limit.

7. Check the completeness and correctness of data before statistic analysis

8. Group interview with students and in-depth interview teachers on another day.

4.6   Analysis

1) For descriptive data using SPSS (Statistic Package of the Social Science) to analysis.

- Personal data: use percentage.

- The condition of teaching & learning: using percentage mean scored and standard deviation.

- Critical thinking abilities: using percentage mean scored, and standard deviation.

2) For qualitative data, interview, using content analysis.

4.7   Finding and Result

Finding of information gathering from data exercise will present as following 3 parts:

Part I	Personal Data, and structure of the respondent profile.
Part II	The measuring of critical thinking skills.
Part III	The condition of teaching-learning on:

- The curriculum

- Student's learning behavior

- Teachers

- Teaching method and strategies in the class

- Teaching environment

Part I   Personal data and structure of the respondent profile.

Table 4.1   Number and Percentage of students profile of sex, age, GPA, and classes.

	Year of study			Total
	1st year	2nd year	3rd year	
Sex				
Male	9(22.5)	1(2%)	4(8.5%)	14(10.3)
Female	31(77.5%)	48(98%)	43(91.5%)	122(89.7%)
Total	**40(100%)**	**49(100%)**	**47(100%)**	**136 (100%)**
Age				
18	11(27.5%)	1(2%)	0	12(8.8%)
19	28(70%)	12(24.5%)	0	40(29.4%)
20	1(2.5%)	34(69.4%)	18(38.3%)	53 (39%)
21	0	2(4.1%)	29(61.7%)	31(22.8%)
Total	**40**	**49**	**47**	**136(100%)**
$X = 19.76, SD=0.91$				
GPA				
2.00-2.50	0	0	4(12.1%)	4(3.8%)
2.51-3.00	16(42.1%)	11(33.3%)	21(63.6%)	48(46.2%)
3.01-3.50	20(52.6%)	18(54.5%)	8(24.2%)	46(42.2%)
3.51-4.00	2(5.3%)	4(12.1%)	0	6(5.8%)
Total	**38**	**33**	**33**	**104(100%)**

Table 4.1, shows the personal data and structure of the respondent profile. There were 89.7% female and 10.3% male. The biggest group of age was 20 equal to 39%, then 29.4% have the age of 19 years. Average and standard deviation of age were 19.76 and 0.91. 46.2 percent had GPA between 2.51-3.00, the following group of GPA in between 3.01-3.50 were 42.2 percent.

Part II. Measuring the critical thinking skills.

Table 4.2 **Number and percent of nursing students' critical thinking skills separate between classes and level of critical thinking skills 5 aspects and total aspects.**

	CLASSES									Total
	1st year			2nd year			3rd year			
	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	
• Inferences	23 (57.5%)	17 (42.5%)	0	39 (79.6%)	9 (18.4%)	0	40 (85.1%)	7 (14.9%)	0	X 6.23, SD1.9 min 2, max 12
• Recognition of Assumption	9 (22.5%)	19 (47.5%)	12 (30%)	27 (55.1%)	18 (36.7%)	4 (8.2%)	24 (51.1%)	12 (25.5%)	11 (23.4%)	X 8.75, SD 2.83 min 4, max 16
• Deduction	3 (7.5%)	13 (32.5%)	24 (60%)	6 (12.2%)	20 (40.8%)	23 (46.9%)	3 (6.4%)	22 (46.8%)	22 (46.8%)	X 11.34, SD2.59 min 4, max 15
• Interpretation	5 (12.5)	28 (70%)	7 (17.5%)	9 (18.4%)	36 (73.5%)	4 (8.2%)	13 (27.7%)	31 (66%)	3 (6.4%)	X 9.02, SD 1.84 min 4, max 13
• Evaluation of argument	0	3 (7.5%)	37 (92.5%)	2 (4.1%)	9 (14.3%)	40 (81.6%)	5 (14.9%)	6 (12.8%)	36 (76.6%)	X 13.22, SD 2.62 min 0, max 16
Total	1 (2.5%)	39 (97.5%)	0	8 (16.3%)	41 (83.7%)	0	7 (14.9%)	39 (83%)	1 (2.1%)	X 48.57, SD 7.37

Table 4.2, presents the result of measuring critical thinking skills in nursing students. The total of five aspects measuring was result in a moderate level in all classes as the first year student report 97.5 percents, the second year present 83.7 percents, and the third year reported 83 percent. When considering each aspect found that all classes have the highest level on critical thinking skills as the aspect of evaluation of argument, the percentage reported from the 1st year, 2nd year, and 3rd year as 92.5, 81.6, and 76.6 percents. However when considering the lowest aspect of all classes will report in the aspect of the inference as percentage from the 1st year, 2nd

year, and 3rd year students as 57.5, 79.6, and 85.1 percents resulting in low level of the critical thinking skills. Especially the third year students found in the lowest of all classes in this aspect.

Part III The condition of teaching and learning

Table 4.3 Number and percent on the condition of teaching learning that can promote critical thinking on nursing students, Boromarajonani college of Nursing, Suphanburi.

	Class									Total
	1st year			2nd year			3rd year			
	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	
Curriculum	0	36	4	2	3	4	0	39	8	X25.63, SD4.65
		90%	10%	4.1%	87.8%	8.2%		83%	17%	min11, max37
Student's learning behavior	0	31	9	0	42	7	0	31	16	X 67.17 SD 6.23
		77.5%	22.5%		85.7%	14.3%		66%	34%	min 52, max84
Teaching method	0	35	5	0	47	2	0	43	4	X13.09, SD 1.84
		87.5%	12.5%		95.9%	4.1%		91.5%	8.5%	min 9, max 18
Teachers	0	25	15	0	41	8	0	38	9	X 58.23, SD 7.67
		62.5%	37.5%		83.7%	16.3%		80.9%	19.1%	min 35, max72
Teaching environment	3	37	0	6	42	0	5	40	2	X 75.39, SD 11.03
	7.5%	92.5%		12.2%	85.7%		10.6%	85.1%	4.3%	min41, max103

Table 4.3. present five aspects of the condition on teaching-learning that can critical thinking in nursing students. Most of students' opinions were result in the moderate level on all aspect.

The finding from in-depth interview teachers and group interview of students in the condition of teaching and learning in Boromarajonani college of nursing, Supanburi province will present below.

The finding of students' learning behaviors

The preparation before class

Most of them are not preparing themselves to read or to study or to preparing questions before class especially the second year and the third year students.

The first year nursing students most of them agree that they are always preparing themselves before class in the subject of basic concept and principle in nursing. The reason is because teacher always asks them question "why" and they have to think and answer. However, teacher will not reflect the right or wrong answer but will be emphasize on the reasons. They agreed that this is the subject they like to study the most because the teaching style and activities in the class are very much interesting and very active and always encourage them to think all the time.

The behavior in the class and the teaching-learning techniques

Mostly they are not asking questions in the classroom as there is no inquire yet. Because they did not yet understand all of what teacher is saying in the class, however after they have read, if they have an inquiry, they will ask teacher after class.

Then I have asked them more about if they ever sleep in the class. Most of them answer that they sometime sleep in the class and most of time they feel sleepy after teacher start giving them information for a while and if that class using lecture only.

They are also not sharing much opinion in the classroom.

The teaching method and strategies in classroom

The teaching techniques mostly use lecture explaining or teacher-centered. Teacher will give the information and they were mostly siting and receiving information from teachers. When in-depth interview teachers were also the same information that they were mostly using lecture to be mainly teaching technique as the reason they cannot using student-centered class because they have to give all content before students will go to field work. They were scared that teach them as student-centered will not cover all contents.

However, some subjects on the first year students they have an active learning and sharing their opinion most of the time by no right or wrong answer in the subject of group dynamics, and the basic concepts and principle in nursing which they report the most interesting class.

The second year was also have to learn by technique of problems based learning on two subjects but there are not full course, it was only some part of it. And also teacher who take responsibility gave the same information the same that they were also using problems based learning teaching technique but not fully technique, they were applied some techniques to approach their students for example give them searching or discovering information by themselves.

I have asked more about if teachers have been train to teach critical thinking yet, the answer is almost of teacher already pass this training, except new teachers.

The Teaching and learning environments

From interview group of students found that the environment in general are quiet good for example, internet room, library room, however they did not want to use library except they have to find book or literatures to answer teachers question or to make their report because the atmosphere in library did not encourage them want to use as light, air ventilation, and mostly of the books are textbook in nursing science which they did not want to read.

4.8   Discussions

From the result of study can be discuss as follow:

4.8.1   Critical thinking skills

The critical thinking skills of nursing students the first year, the second year and the third year students at Boromarajonani college of nursing, Suphanburi province result that most of them have the critical thinking skills in a moderate level. This result agreed with Jithaputh, S. (1996), Khampak, K (1996), Loeboontawatchai (1995), Ratanakomol, P; et al (1999) and Chaiprasit, S. (1999) that also reported the critical thinking skills of nursing students were found in the moderate level on the total five aspects.

After considering each aspect, found that the critical thinking skills were in the highest level on the aspect of the evaluation of argument. It could be explain that the evaluation of argument type of thinking measuring form was to considering and judge of infer only one reason which important and directly involve to the given in short situation and not too much complex.

When considering the aspect of inference which found the lowest score. It could be explain that the inference is to considering the possibility of the conclusion from the given situation and must use also general knowledge to judgement the possibility of conclusion which have to considering also others aspects to reflecting the ability on inference

However to work as a professional nurse, the critical thinking skills should have in a high level because their duties must affect directly to human's life. The result presenting that nursing students have a moderate level on critical thinking skills will not enough to provide clients' appropriate practice care (Khampak, K. 1998). Nursing college should considering the method or the teaching-learning model or activities to increasing all aspects of critical thinking skills.

4.8.2 Curriculum

The data resulting that the opinions of students on the curriculum are in the moderate level. The contents in the curriculum are abreast of time and relation to social need report average scores equal to 3.65 and standard deviation equal to .87. The instruction activities can promote them to self-discover, analytic thinking are also result

in moderate level, mean scores and standard deviation reported 3.74 and .72. After considering of all items asking about the curriculum arranging the result found in a moderate level, the average score and standard deviation were 25.63 and 4.65 minimum 11 scores and maximum 37 scores (the total score is 40). However, after considering each items found the lowest score was on the question asking if it has enough time to self-study as mean score and standard deviation equal to 2.67 and 1.02 (see appendix III-curriculum). This result means that should arrange more time for students in self-study.

4.8.3 Student's learning behavior

The result showed that most of student's learning behaviors in total are in the moderate level as mean scores and standard deviation reported 67.17 and 6.23, minimum 52 and maximum 84 (total score 90). The highest score is the question asking about if they feel proud themselves when they can use their knowledge and their ability to work until success, the mean score was 4.51 and standard deviation was .58 (see appendix III-student's learning behavior on item number 1.5). The following highest is the question asking about were can they accept their friends' opinion if their friends have the better reason when they have an arguing on academic area, mean scores and standard deviation resulted 4.33 and .63 (see appendix III-students' learning behavior on item number 1.11). This result mean students are also have some of good attitude to develop critical thinking.

The resulted on students' learning behaviors that should be improve

The preparation before class and the behavior in the class

The lowest score resulting on question about if they always have inquiry that need to ask teacher while studying in class which mean score and standard deviation were 2.85 and .75 (see appendix III-students' learning behavior on item number 1.10).

After explored by interview students, its confirms that they are mostly not asking questions in the class as the reason of there have no inquiry yet. Because they were not yet understand all of what teacher saying in the class, however after they have read, they will always have inquiry and they will ask teacher after class.

In the classroom, most of them answer that they are sometimes sleep in the class and most of time they feel sleepy after teacher start giving them information for a while time and if that class using lecture only.

This may be because of student did not preparing themselves before class, so they have no inquiry yet. And it is might be mean that lectures class did not interesting or not actively so it is cause them sleepy. It is also might be because of teacher did not give them a chance to asking questions. It can be confirm by the data found on teacher's behavior on teaching in the class at item number 3.12 that teacher are mostly not gave students chance to asking question which the mean score and standard deviation were report 2.24 and .94. And another reason may be because of teachers are mostly judge their answer right and wrong without discussion yet, which mean score and standard deviation reported 2.34 and .85

4.8.4 Teacher and teaching-learning approach & Technique

I have asked the, about the mainly teaching – learning technique. Example question " What is the main teaching technique of teaching that teacher mostly using in the class". All of them were response that the main teaching technique was lecture emphasizing contents especially the 3rd year class, said "around 70% of class is the lecture. The 2nd year were response the same thing that 60% of class were using lecture, however 2 subjects using Problem-base learning technique. The data result as every class 30.7 percent have high agreeing that teacher using lecture all class time and 53.3 percent have a moderate agreement, means score and standard deviation were 3.31 and .77.

From in-depth interview two teacher, the response answers were the same that lectures were the main teaching technique using in the college as the reason they have to give all content before students will go to field work, they scared that teach them as student-centered will not cover all contents. I have asked more about if teachers have been train to teach critical thinking yet, the answer is almost of teacher already have been trained, except new teachers.

4.8.5 Teaching and learning environments

Questions asked about teaching environments covering friends, library, classroom & laboratory room, and others facilities that can promote critical thinking. The data resulting that student's opinion in a moderate level 85.1, 85.7, and 92.5 percent of the 3rd rear, 2nd year, and 1st year students. Mean score and standard deviation were 75.39 and 11.03 minimum score 41, maximum 103.

After considering each item found that, there was the lowest score on the question asking if the library have good service and abreast of time as mean score 2.79 and standard deviation .99 (see at appendix III-library item number 5.12), confirm by interview students, they gave same opinion that they did not want to use library except they have to find book or literatures to answer teachers question or to make their report because the atmosphere in library did not encourage them want to use as light, air ventilation, and mostly of the books are textbook in nursing science which they did not want to read.

4.9   Lessons Learned and Recommendation.

I would like to state that I have learnt a lot from this lesson. It is very important or I could say that it is the most important to gathering real data that can reflect the true or the real situation. It will be very much valuable to your book or to your research or project that you will propose to solve the problems. If the information reflecting the true you will can solve directly to the cause of problems. You must always ask yourself what data necessary to collect and is it can use or can not use to support your work, what should be the appropriate techniques or tools. The important thing is you have to study a lot before decided to gathering all information. The strength and the weakness of each technique and tool will help you to prepare better. And you will know how to fixing that weakness and the other reason is very costly and time – consuming, only the well – prepared all techniques, tools and every steps can solve this problems but I still not ensure that it will give you a complete data. I can recommend that every steps are

very important; preparation, collecting data, analysis and report data that can always make a mistake and your work will not be accept which finally will be just wasting time and money. This is the most valuable that I have learnt.

4.10 Limitations

This study may not refer to others nursing college, small study population will be reflect only this specific area of study.

4.11 Conclusion

There are still needs to improve the critical thinking skills in nursing students. As the measuring their skills were in the moderate level which is not well enough to work as a nurse who has the very important role to others as an individual client, families client, social and communities. Individual nursing student and all around Thailand can be reflecting to all. The country will grow better, if all people have better thinking skills. Nursing college should also considering and make improving the critical thinking skills to each student nurse to prepare them do the better job and better life in the near future.