CHAPTER IV

RESEARCH FINDING

In this chapter, the research finding have been presented in two main topics :

1) Quantitative data summary and analysis

2) Qualitative data summary and analysis

1) Quantitative data summary and analysis

After the students completed the test, the student score and reliability of test were calculated. The data are summarized in table 2.

Table 2 Student score and reliability of test

Total score	60
Highest score	40
Lowest score	14
Range	26
Median	27
Mean	26.37
SD	6.13
Reliability of test (Kuder-Richardson 21)	0.709
Standard error of measurement	3.307

The student score was compared to minimum passing level (MPL) for each objectives (recall, interpretation and problem solving). Paired T-test procedure was employed to test the differences between score and MPL. The data are obtained in table 3.

Table 3 Differences between score and minimum passing level (MPL) for each objectives

	Recall	Interpretation	Problem solving
Score (Mean)	7.00	9.11	10.16
MPL	10.45	11.73	11.49
Gap between Score and MPL	3.45	2.62	1.33
Paired T-test	$p < 0.005$	$p < 0.005$	$p < 0.005$

From paired T-tested, there is statistically significant in differences between score and MPL for each objectives

In the step of test construction, the difficulty factor (DF) that represented the difficulty of test from teachers' view point was assessed. After the item analysis process, the difficulty index (DI) that represented difficulty from students' view point and the discrimination index (DIS) that represent discrimination power of the test were also assessed. Table 4 is presented for DF, DI and DIS of the whole test.

Table 4 Difficulty factor (DF), Difficulty index (DI) and
Discrimination index (DIS) of the whole test

	n	range	mean	SD
DF	60	0.23-1.00	0.561	0.173
DI	60	0.05-1.00	0.439	0.260
DIS	60	-0.21-0.42	0.101	0.159

The DF, DI and DIS for each objectives (recall, interpretation, problem solving) are summarized in table 5.

Table 5 DF, DI and DIS for each objectives

	Recall		Interpretation		Problem solving	
	(mean)	(SD)	(mean)	(SD)	(mean)	(SD)
DF	0.523	0.17	0.587	0.18	0.575	0.17
DI	0.345	0.24	0.471	0.24	0.502	0.29
DIS	0.079	0.17	0.102	0.15	0.122	0.16

The unpaired T-test was employed to analyze the differences in mean of DF, DI and DIF between each pair of objectives (recall and interpretation, Interpretation and problem solving, problem solving and recall). The data is shown in table 6, table7 and table 8 for DF DI and DIS respectively.

Table 6   Unpaired T-test between DF of each objectives

	Recall (mean)	Interpretation (mean)	Problem solving (mean)	Unpaired T-test
R & I*	0.523	0.587	–	p>0.05
I & P*	–	0.587	0.575	p>0.05
P & R*	0.523	–	0.575	p>0.05

*   R = Recall

   I = Interpretation

   P = Problem solving

Table 7   Unpaired T-test between DI of each objectives

	Recall (mean)	Interpretation (mean)	Problem solving (mean)	Unpaired T-test
R & I*	0.345	0.471	–	p<0.05**
I & P*	–	0.471	0.502	p>0.05
P & R*	0.345	–	0.502	p<0.05**

*   R = Recall

   I = Interpretation   **   Statistically significance

   P = Problem solving

Table 8   Unpaired T-test between DIS of each objectives

	Recall (mean)	Interpretation (mean)	Problem solving (mean)	Unpaired T-test
R & I[*]	0.079	0.102	–	p>0.05
I & P[*]	–	0.102	0.122	p>0.05
P & R[*]	0.079	–	0.122	p>0.05

[*] R = Recall

    I = Interpretation

    P = Problem solving

From table 6 and table 8 ,there are no significantly differences in DF and DI between each objectives. However, table 7 shows the significantly differences in DI between recall and interpretation and between recall and problem solving.
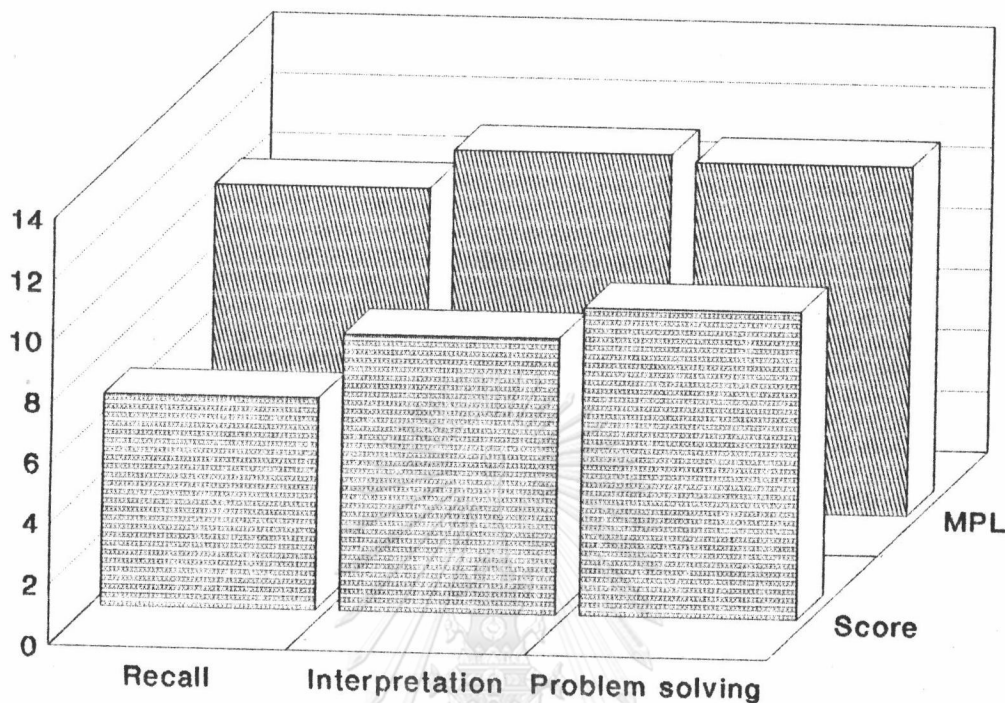
GAP between Score and MPL

Chart 1   Differences between score and minimum passing level
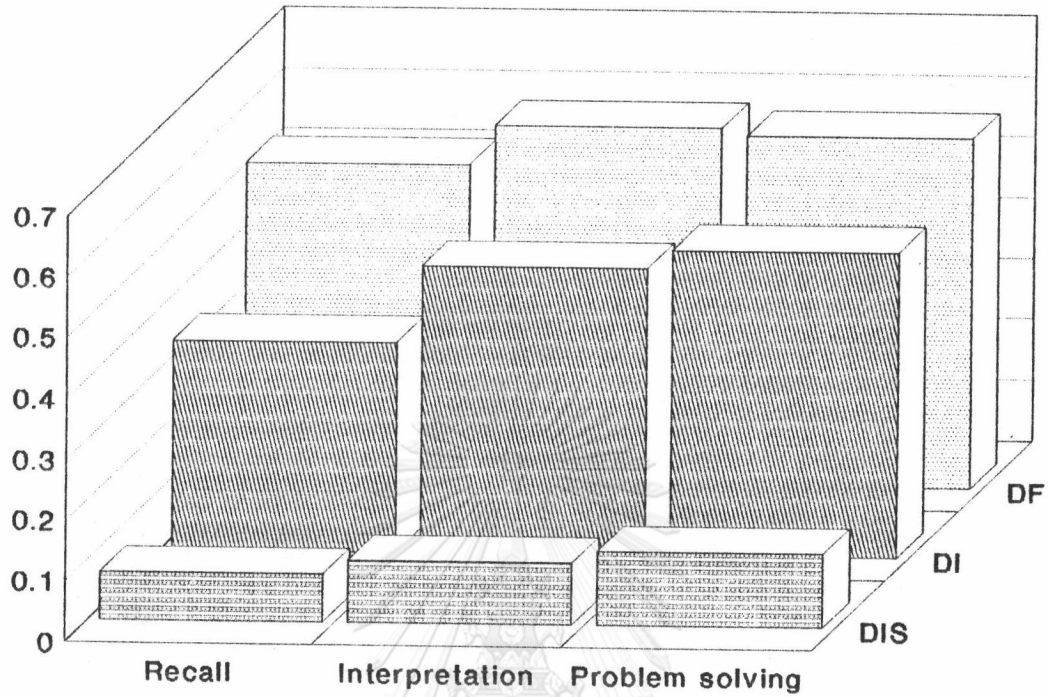   (MPL)   for each objectives

DF, DI and DIS for each objective

Chart 2   DF, DI and DIF for each objectives

2) <u>Qualitative data summary and analysis</u>

The qualitative data was obtained through participant observation and in-depth interview from three groups of key informants : the students, the faculty member and the administrators. All of the data were analyzed, sorted and summarized in 4 topics:

1. About diagnostic examination

2. Sources of student discrepancy

3. How to improve student competency

4. General opinion about the curriculum

1. <u>About diagnostic examination</u>

Most of the students accepted that diagnostic examination could help them in identifying their owns weakness. However, there were some problems about coverage of the content that only 60 items might not cover all the essential aspect in general surgery. Some of them mentioned about "forgetting effect" because at the time they were tested, they had already passed surgery clerkship. Few students stated that they had guessed for the answers because it was MCQ items and no pressure effect on their score.

From the faculty and administrators' view, they all accepted that this test could help diagnose the students discrepancy in some aspects but not all aspects. Some stated the problem of whether each item could represent each objective. Some of the administrators questioned about what should be the appropriate proportion for recall, interpretation and problem solving.

In all three groups, they realized that feedback information was very important. They needed these information to improve themselves, not only the students but also the teachers and the administrators. They thought there should be a system of feedback through out the programme.

2. Sources of student discrepancy

All the students felt that one of the sources of their discrepancy was lack of basic science knowledge. They said that they had studied basic science in phase I but it was not enough to correlate with clinical problems. A lot of them had to take a lot of time to review from text book and some time it was very difficult to understand, especially from English text book. Time limitation for self-directed learning was mentioned by the students. They also complained about teachers' various teaching style. Some teachers used teacher-centered or lecture. Some used student-centered and self directed learning.

From the teachers' view, they also stated that the students had less basic science knowledge and less time for self study. Time limitation factor was not problem only for students but also problem for teachers. The teachers complained about service workload and motivation for teaching. Because all of the staffs in Bhumibol Adulyadej Hospital are under military system so the incentive or promotion will come from military, not from the university. Teaching is not the major role for them.

From the administrators' view, they also realized about the problem of time limitation and incentive for teaching.

3. How to improve student discrepancy

The students wanted to improve themselves by reading more in the topic that they lack. They also planed to set up a peer tutorial group. Most of them thought that studying from the real cases made them gain knowledge and understand better than reading from the books. However, they wanted more Thai textbook to minimize time for self study. They agreed that examination with feedback information could improve them and they wanted to practice more examination in other subjects.

From the teachers' view, they thought that they should devote more time for the students. Some teachers recommended "combination" teaching style. Teacher should introduce the problem for the students first and let them have time to think and discuss about the problem. Student should also have time to study by themselves and come back to discuss with the teacher again. However, teacher should also provide conclusion for the student to save time and make the students understand well. Feedback information is very important for both teacher and students.

All the teachers wanted the administrators to solve the problem of incentive for teaching. They thought that this would help improve motivation for teaching.

From the administrators' view, they thought that one of the way for educational improvement was faculty

staff development. They should provide more communication and more incentive for the staff.

4. General opinion about the curriculum

All the students, faculty staffs and administrators agreed that the CTPB was a good ideal curriculum but there were a lot of problems in practice. These problems need participation from every group of people. However, from the students opinion, although they had few confidence on the coming comprehensive examination but most of them had enough confidence to cope with the patient problems.

Some teachers accepted that they had not enough knowledge and understanding about PBL and the whole curriculum. There were lack of communication among those who set the curriculum and those who implemented it. Both the staffs and the administrators agreed that this curriculum need more collaboration effort both from CU and MSRTAF.

Summary

In this chapter, the research finding from both quantitative and qualitative data has been presented. The discussion and conclusion of the finding will be presented in the next chapter.