Evaluation The Quality of Problem Based Learning (PBL) Cases Scenario in The First Blocks in Academic Year 2013 – 2014 at Dental School of Universitas Muhammadiyah Yogyakarta

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Abstract

Objective: The quality of dental cases scenario is an important factor in the success of Problem Based Learning (PBL) method. High quality scenario cases connect between the scientific knowledge with the real problems or show the clear connection with the profession in the future, so that it will increase the student motivation. The good case should be able to be a trigger for self directed learning, and in line with the prior knowledge of students, it will enhance the problem solving and can stimulate group dynamics. Scenario cases were supposed to be written very carefully to avoid bias and to be able to reflect the expecting purpose of the study. The aim of this study was evaluate the quality of cases that have already used at small group discussion in the first block of PBL blocks year 1 – 4, in academic year 2013 - 2014 at dental school of UMY.

Method: Questionnaires were used to assess the student perception towards quality of the cases scenario during small group discussion in block 1, 7, 13, and 19. Questionnaires were divided into 18 items, including 6 aspects that have to be involved in each scenario cases. Good PBL cases comprise of thinking stimulation, logical analysis (3 items) stimulate independent learning (3 items), encourage to learn about targeted content (3 items), increasing the interest toward learning materials (3 items), relevance of the future profession and real context (3 items), and the compatibility with previous knowledge level (3 items). Twelve cases were evaluated by student. All items are assessed using 5 points of Likert scale after being discussed. Students were told to indicate the item relevance level in each case (scale 1= strongly disagree to scale 5 = strongly agree).

Result: Total student that involved in this study were 404 students (first year student: 110 students, second year: 109 students, third year: 88 students, and fourth year: 97 students). The results of descriptive statistics per item in 12 scenario with N=110 show that the mean score and standard deviation is in the range mean of =3.14, SD = 0,8, to mean of 4,07,SD = 0.7, The highest mean score was at items 5 and 13 (mean =3.8). Overall no items were rated as insufficient (a mean score below 3.0) in all cases scenario. There are four cases scenario that need more attention and improvement at the several aspects of the scenario (means score more than 3 to 3.5).

Conclusion: It can be concluded that scenario cases in the first blocks at academic year of 2013 to 2014 in dental school of UMY already have good quality but still need improvement in some aspects to meet the criteria of a good PBL case scenario.

Key words : cases, PBL, and quality

Introduction

High quality problems are crucial for successful learning in Problem Based Learning (PBL) . **Criteria of effective case/problem:** Stimulates thinking, analysis, & reasoning; Stimulates self directed learning; leads to studying the intended contents; enhances interest in subject matter; relevance to future profession with realistic context; matches level of prior knowledge.

EVALUATION

EFFECTIVE CASE DESIGN

PRIOR KNOWLEDGE — QUALITY OF PROBLEMS — TUTOR

GROUP FUNCTIONING

TIME SPENT — INTEREST

ACHIEVEMENT

Theoretical model of PBL adapted from Schmidt and Gijselears (1990)

Figure 1. Small Group Discussion activities in Dental School of UMY

Methodology

1 – 4 year dental students of Universitas Muhammadiyah Yogyakarta (N = 404), completed an 18-item questionnaire on various aspects about case quality. All items were rated on a five-point Likert scale after the problems were discussed by students. The 1st year students given their opinion about case quality in the block 1, the 2nd year students given in the block 7, the 3rd year students given in the block 13 and the 4th year students given in the block 19. The data was analyzed with descriptive statistics (means score and standard deviation (SD)) per item per case scenario, to get more specific analysis and evaluation.

Data collection

Case 1 * Case 2 * Case 3 *

3 weeks
(*questionnaire)

The standard to interpret mean score each item case quality:
≤ 3 : insufficient
≥ 3 to 3.5 : need improvement
≥ 3.5 to 4 : sufficient
≥ 4 : good

Result and discussion

The mean scores and standard deviation were computed for each item for all 12 PBL cases scenario. The results are shown in Figure 2 – 5. There were 4 cases less challenging to be discussed by the students (rated on items 10 , 11 , 12), the mean score on each item was less than 3.5. Case 2 in block 1, case 3 in block 13 and case 1 in block 19 are less well adapted to meet comprise of thinking stimulation, logical analysis (rated on item 2, 3). Two cases in block 1 (case 1 and 2) are less relevant to the profession in the future (rated on item 14, 15). Effective case scenario should be able to stimulate thinking, analysis, & reasoning, enhance interest in subject matter, and relevance to future profession with realistic context. [1,2]

Figure 2. Mean score on item 1 to 18 for 3 PBL cases scenario in the Block 1 (1st Year)
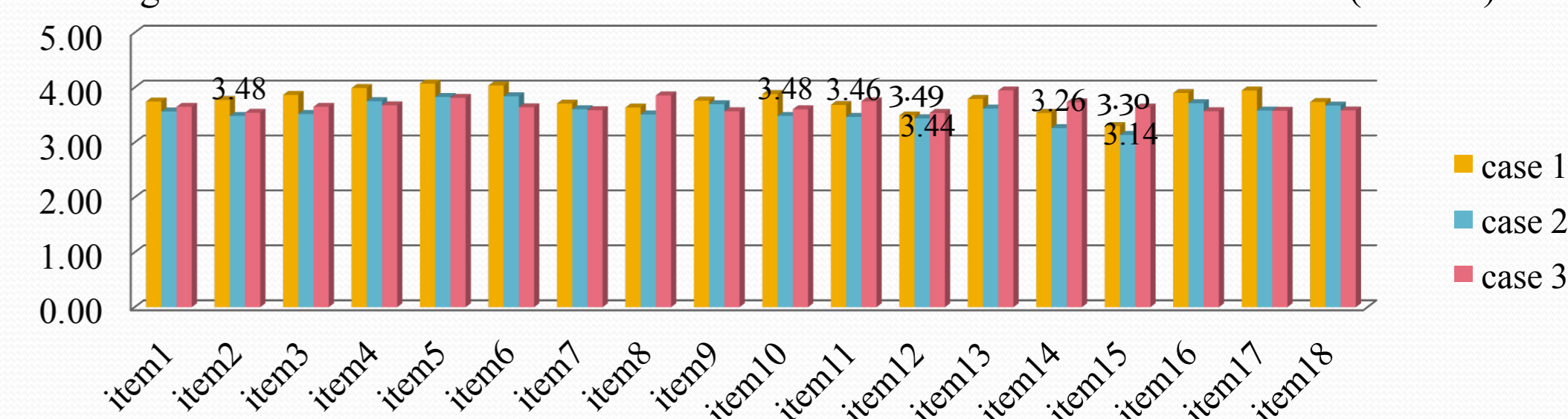

Figure 3. Mean score on item 1 to 18 for 3 PBL cases scenario in the Block 7 (2nd Year)
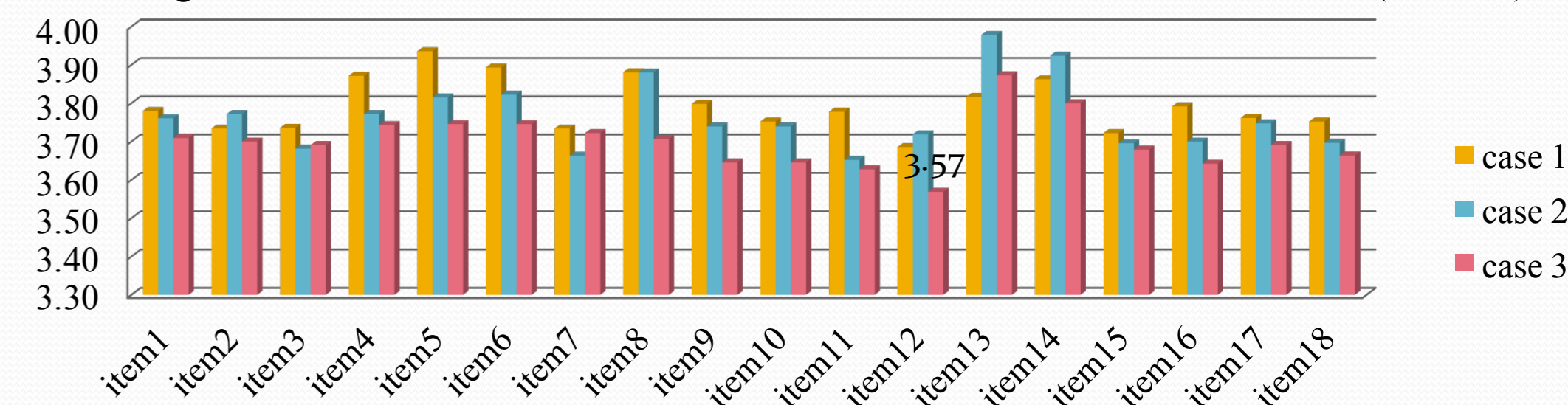

Figure 4. Mean score on item 1 to 18 for 3 PBL cases scenario in the Block 13 (3rd Year)
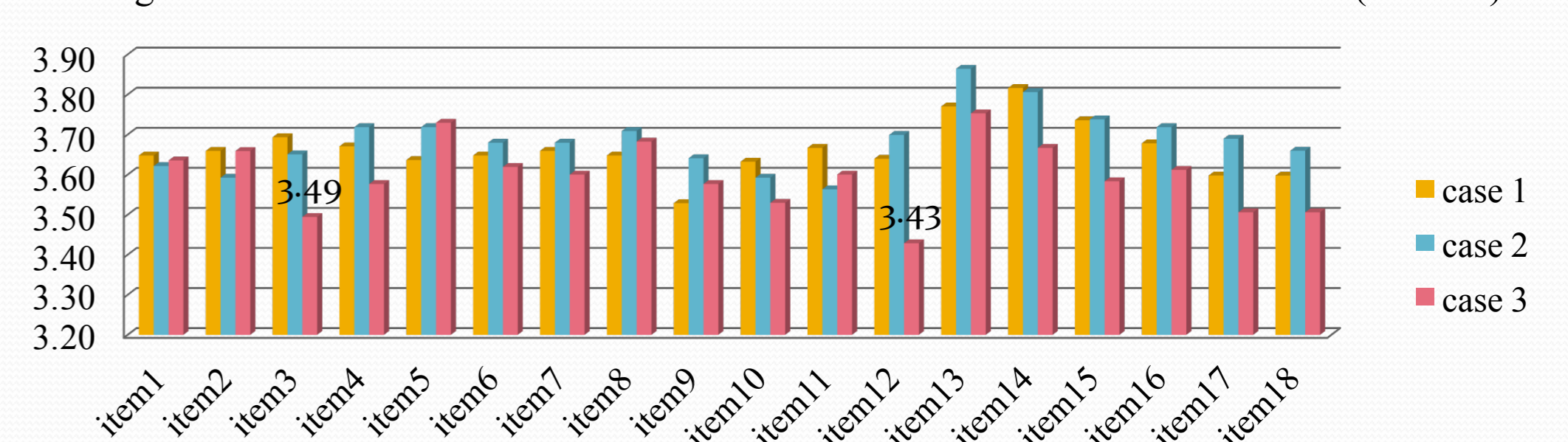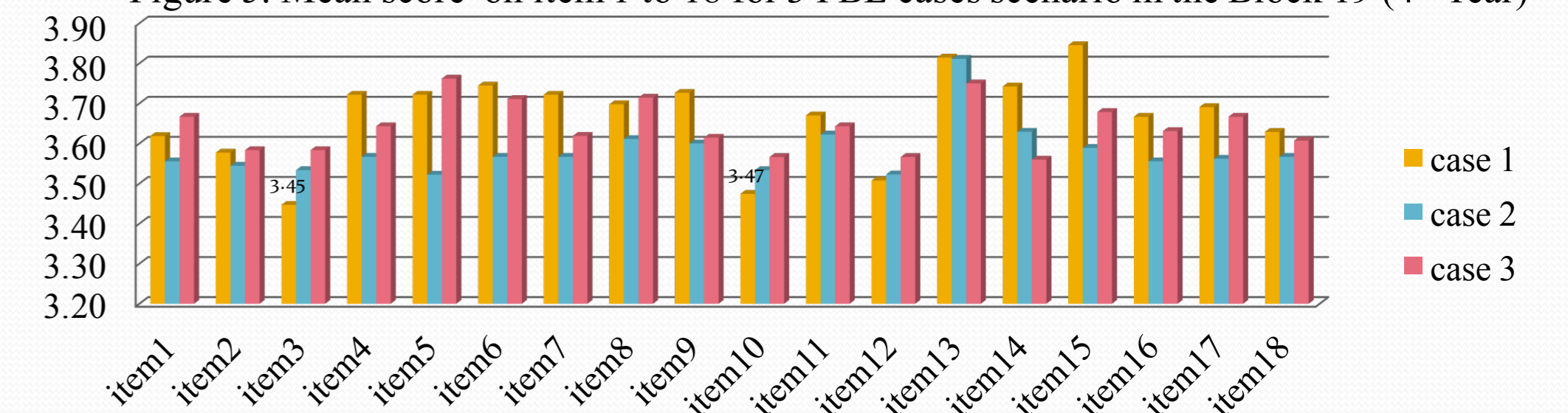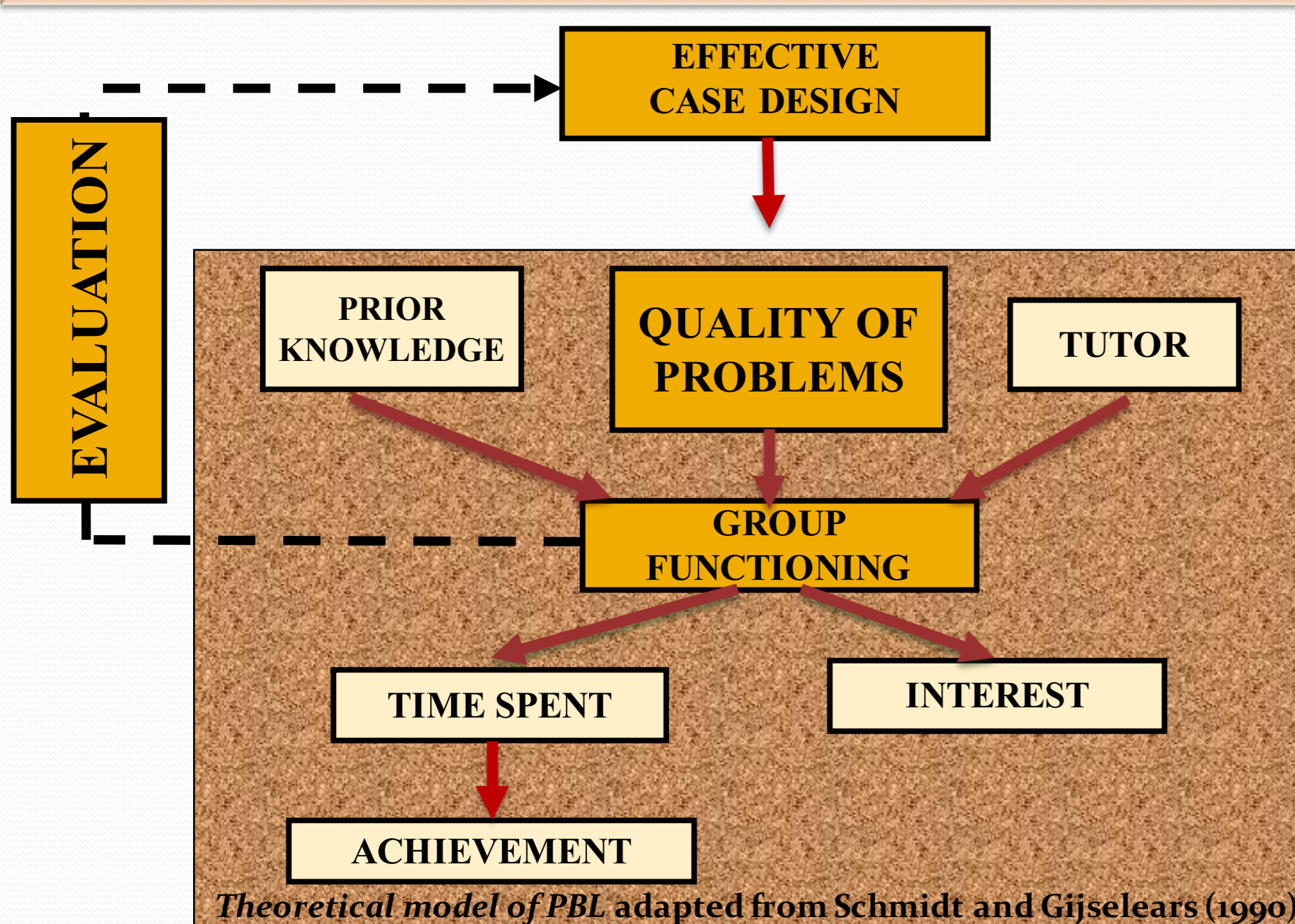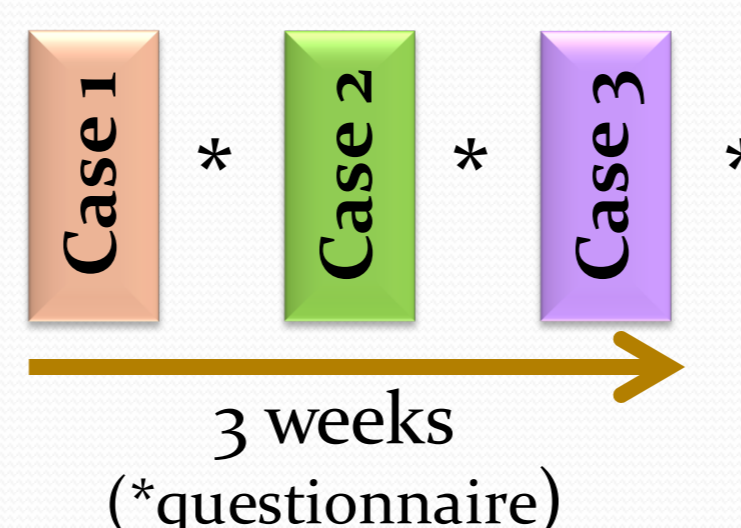

Figure 5. Mean score on item 1 to 18 for 3 PBL cases scenario in the Block 19 (4th Year)

Conclusion

The cases in the first block at Dental School of UMY had meet some criteria of effective case/problem. Therefore in-depth evaluation and improvement on PBL case scenario are needed.

Reference

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