

## Learning Outcomes of Problem-Based Learning between Pre-clinical and Clinical Years of Medical Students

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### Abstract:

To compare learning outcomes of problem-based learning between pre-clinical and clinical years of medical students. Methods: The questionnaires were sent to medical students who enrolled during academic year 2012-2015 and they were asked their personal opinion on learning outcomes from PBL by using Likert scale. The returned questionnaires were divided into pre-clinical (2-3) and clinical (4th-5th) year groups. The difference of opinion rates between both groups were compared by using the independent t Test. Results: The response rate of the questionnaire was 98%. The most of medical students learned by PBL more than 10 times a year. The opinion rates about learning capacity, skills, communications, teamwork and self-assessment were in much agree level. The process of applying to reality situation, knowledge management and self-knowledge management were different with statistical significance between both groups. PBL is learning in a small collaborative group setting which focuses on self-directed learning. The objectives are gathering and arranging knowledge to apply in real life, and students are able to develop analytical skills independently. More than that, students are able to develop logic to build efficient self-learning skills, develop skills in teamwork building, and build motivation for learning. The strategy of PBL is one of tools which help support students to take action and face problems by themselves. They will practice many kinds of thinking skills such as reviewing, critical thinking, analytical thinking, and creative thinking. PBL is a learning experience that is diverse with the nature of the content of the teaching and learning. Therefore, the effectiveness of learning from PBL should begin with

the recognition of students as self-learning processes. Students can learn from their past experiences and apply them within the lessons, because PBL is a process of solving problems.

Problem-Based Learning is knowledge management which uses problem as the starting point for learning. Problem set is a process of research which begins from something that the researchers want to know and set the questions of research. Later, they try to find answers in the research. PBL is used to arrange learning in many fields such as medical and sciences fields in order to help students to use logic and know the usefulness of PBL correctly. This study investigated the effect of PBL on medical students learning outcomes in order to know their capacities which were derived from PBL and their suggestions in teaching management to improve efficiency. All data was recorded and analyzed by Excel program 2013. The statistical comparison between the pre-clinical and clinical year groups used independence t Test. Ethical research was approved by the committee from Suranaree University of Technology. PBL management in the Institute of Medicine, Suranaree University of Technology has been conducted since the 2nd year of medical students. It takes 2 years of study in the pre-clinical 2-3 year class. The learning objectives include: understand the knowledge, application of knowledge, communication skill, teamwork skill and life-long learning. However, it does not handle PBL in the clinical year of medical students because they were divided into the affiliated hospital and too small number to set PBL group. Learning with the original group members without the rotation of the members may affect learning in some medical students. So they want to have circulation of

members in group for each PBL session. The role of facilitator of each group was different such as controlling time, replying questions for students, planning for teaching and preparing for class, all may have different effects on learning groups. The comments from medical students on other issues, such as preparing in some subjects is less time.