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KANTIKAN SEUPKINORN : A STUDY OF LEARNING OUTCOMES AND PROBLEM SOLVING ABILITIES ON SUBSTANCE IN DAILY LIFE OF SIXTH GRADE STUDENTS TAUGHT BY 4 MAT APPROACH. THESIS ADVISORS : ASST. PROF. WATCHARA LOWRIENDEE, Ph.D., PRASERT MONGKOL, Ed.D., AND ASSOC.PROF. KANCHANA KUNARAK, M.Sc. 228 pp.

The purposes of this experimental research with one group pretest – posttest design were : 1) to compare learning outcomes on substance in daily life of sixth grade students before and after being taught by 4 MAT approach; 2) to compare the students' problem solving abilities on science of the sixth grade students taught by 4 MAT approach; 3) to investigate the students' opinions towards 4 MAT approach.

The sample consisted of 39 sixth grade students of Klongtaweewattana School, Taweewattana District, Bangkok Metropolitan. The research instruments used for gathering data were : lesson plans, learning outcomes tests, problem solving abilities on science test and questionnaires. Statistical analysis were accomplished by percentage (%) , mean ( $\bar{x}$  ), standard deviation (S.D.) and t-test dependent.

The results of this research were :

1) The learning outcomes on substance in daily life of sixth grade students before and after being taught by 4 MAT approach were statistically significant different at .05 level. The students' learning outcomes scores after the instruction with 4 MAT approach were higher than before the instruction.

2) The abilities in problem solving on science of the sixth grade students before and after being taught by 4 MAT approach were statistically significant different at .05 level, the students' abilities in problem solving on science after the instruction were higher than before the instruction whereas the ability to define and clarify the problem was at the highest level and the ability to conduct the problem solving process and evaluation was at the lowest level.

3) The opinions of the sixth grade students towards 4 MAT approach were overall at the most agreement level. ( $\bar{x} = 2.56$ , S.D.0.50) The students strongly agreed with the learning activities, learning usefulness and learning atmosphere.