

Chanisvara Chutkaew 2006: A Development of Geometric Units and Levels of Geometric Thought Based on the Van Hiele Model by Using Dynamic Geometry Software for Mathayomsuksa II Students. Doctor of Philosophy (Curriculum and Instruction), Major Field: Curriculum and Instruction, Department of Education. Thesis Advisor: Associate Professor Siriporn Thipkong, Ed.D. 250 pages. ISBN 974-16-1869-7

This research aimed to develop Geometric units and levels of Geometric thought based on the Van Hiele Model by using dynamic Geometry software for Mathayomsuksa II Students and to study levels of Geometric thought based on the Van Hiele model with 5 levels: Base level or Level 0 Visualization, Level 1 Analysis, Level 2 Informal Deduction, Level 3 Formal Deduction, and Level 4 Rigor besides studying their attitudes towards Geometric units and their opinion after using Geometric units .

The experimental group for this research was one class that consisted of thirty-nine Mathayomsuksa II students from Kasetsart University Laboratory School in the second semester of the academic year 2005 by using cluster sampling approach. Geometric units comprised three units which were parallel line, similarity, and exploring geometric figure used dynamic geometry software that was the Geometer's Sketchpad or GSP emphasizing the Van Hiele Model. The instructional process involved 14 periods, each of which lasting 50 minutes. The instruments in data collection consisted of interviewed form, geometric units with the efficiency criterion of 75.81/72.63 that more than 70/70, geometric thinking level test, achievement test, behavior evaluation form, attitude test, worksheet evaluate form, and questionnaire. Content analysis, percentage, mean, and match-paired t-test were employed for data analysis. The research findings were as follows:-

1. Mathayomsuksa II Students who learned the Geometric units had most increased levels of Geometric thought based on the Van Hiele Model at Level 2 Informal Deduction.

2. Mathayomsuksa II Students who learned the Geometric units had got good attitude towards the Geometry at .01 level of significance.

3. Almost all Mathayomsuksa II students expressed their good opinions that they agreed and also consented that Geometric units were appropriate to use GSP in learning.

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