

Title : A Study of Relationship between Mathayom Sueksa I students' Geometric Thinking Levels based on the Van Hiele Model and their Mathematical Reasoning

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ABSTRACT

This research aimed to 1) investigate Mathayom Sueksa I students' geometric thinking levels based on the van Hiele model, 2) study Mathayom Sueksa I students' mathematical reasoning, and 3) study the relationship between these students' geometric thinking levels and their mathematical reasoning. The sample group consisted of 260 Mathayom Sueksa I students of Phonthong Pattana School and Phonthong Wittayayon School under the Office of Secondary Education Area 27. The instruments used in this study were a test of geometric thinking developed by Usiskin and a mathematics achievement test adapted from the one developed by Nitaya Thammikakul. The statistics used in analyzing data were percentage and Spearman's correlation.

The Research results were as follow:

1. Most of these Mathayom Sueksa I students' geometric thinking level based on the van Hiele model was found in Level 3: informal deduction(42.98%); level 2: analysis (21.19%); Level 4: deduction (15.20%); Level 1: visualization (13.89); and Level 5: rigor, which is the highest level of geometric thinking(5.97%).

2. Most or 51.16% of these Mathayom Sueksa I students were found with the moderate level of mathematical reasoning; followed by the high level, accounting for 30.52%; and 18.32% with the low level.

3. There was a positive correlation of 0.792 between these Mathayom Sueksa I students' geometric thinking levels based on the van Hiele model and their mathematical reasoning levels; indicating that the students of the high levels of geometric thinking were likely to have high mathematical reasoning.



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