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DETERMINING ELEMENTARY SIXTH GRADERS' MISCONCEPTIONS IN "POINTS, LINES, LINE SEGMENTS, RAYS and PLANES" AND THE REASONS UNDERLYING THESE MISCONCEPTIONS

ABSTRACT

In this study it has been worked out to determine the elementary sixth graders' misconceptions in "Points, Lines, Line Segments, Rays and Planes" and their thought strategies that causes in forming these misconceptions. Thought strategies were compared with the results of geometric sub-dimensions of TIMSS 1999 and PISA 2003 Reports. The misconceptions of students were examined in terms of various varieties. Data collection methods used in this study were the explanation parts that lay under each diagnosis question prepared to learn the thought strategies and to determine misconceptions. Face-to-face interviews with the students were made in the course of having insufficient answer to that part.

In this study sixth grade students in the city of Aydın were taken as an environment. Among sixth grade schools 5 were taken from the central part of Aydın and 3 were taken in the town of İncirliova of Aydın as samples.

It was found from this study that sixth grade students have many misconceptions regarding with the concepts of points, lines, line segments, rays and planes topics. Misconceptions such as associating the geometrical concepts with daily life, misconceptions in using the characteristics of common basic geometrical concepts in algorithmic questions and correlating between the geometric concepts were identified as the crucial ones.

KEY WORDS: Misconceptions in geometric concepts, Teaching of geometric concepts, Geometry in elementary, Points, Lines, Line segments, Rays, Planes.