

Understanding the Polygon with the Eyes of Blinds

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Abstract : This paper was part of a broader study that investigated what blind students (BSs) understood and how they used concept definitions (CDs) and concept images (CIs) for some mathematical concepts. This paper focused on the polygon concept. For this purpose, four open-ended questions were asked to five blind middle school students. During the interviews, BSs were presented with raised-line materials and were given opportunities to construct geometric shapes with magnetic sticks and micro-balls. Qualitative research techniques applied in grounded theory were used for analyzing documents pictures which were taken from magnetic geometric shapes that BSs constructed, raised-line materials and researcher's observation notes and interviews. At the end of the analysis, it was observed that BSs used mostly their CIs and never took into account the CDs. Besides, BSs encountered with the difficulties associated with the combination of polygon edges' endpoints consecutively. Additionally, they focused on the interior of the polygon and the angles which have smaller a size. Lastly, BSs were often conflicted about triangle, rectangle, square and circle whether or not a polygon.

Keywords : blind students, concept definition, concept image, polygon

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