

Entering the mathematical register through evolution of the material milieu for classification of polygons

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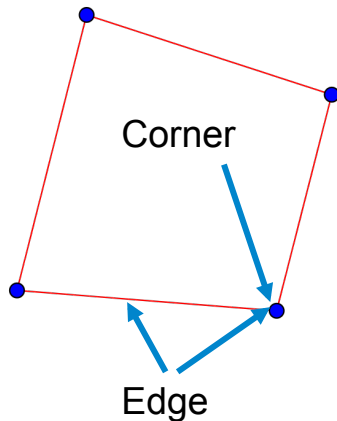
Language Use and Development in the Mathematics Classroom

- Study pupils' mathematical language to gain knowledge that will help the teachers to develop their teaching
- Increase pupils' proficiency in expressing mathematical ideas, reasoning, arguing and justification
- 7-8 years old pupils
- Develop pupils' language use about polygons - classify polygons and discern different parts of a polygon (vertices and edges)
 - Introduce the mathematical register
- Theory of Didactical Situations (Brousseau) as basis for the design
- *What conditions enable or hinder pupils' opportunities to categorise polygons according to their number of edges?*

Mathematical vs everyday register

- Quadrilateral:
 - Firkant (N) = Four-edge
 - Viereck (D) = Four-corner
- Polygon:
 - Mangekant (N) = Many-edge
 - Vieleck (D) = Many-corner
- Vertex/corner:
 - Hjørne (N)
 - Ecke (D)
- All pupils claim that they are counting the edges
- Since $V = E$ counting edges or counting vertices will give the same result

This is a 'four-edge' because it has four edges



- A 'four-edge' with red edges
- A 'four-edge' with blue corners/vertices
- The target knowledge is needed to pick the correct shape

Megan: Thomas counted the lines [strekene/die Striche] and Oliver counted the pointed parts [spissene/die Spitzen].

Thomas: That inside is a corner and those outside are edges.

What could be the arguments for focusing on the mathematical register in this context – or is it not worth the effort?