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*Reasoning, Conjecture Making and Spatial Structuring by High School Student-Teachers and the Radical Constructivist Paradigm*

In a classroom based research, a series of tangram related tasks, focusing at reasoning, sense making and conjecturing were utilized. Sociocultural and psychological components of von Glasersfeld Theory of radical constructivism and Battista concept of spatial structuring have been the basis for the researchers' observations and tasks' analyses. The main purpose for this research was to describe and analyze high school teacher candidates' initial cognitive constructions, their modification, and re-modification of their responses as they were proceeding in their attempts to justify their responses.

The 'tangram' has been originally referred to as the 7-pieces dissection (or tangram problem) consisting of seven flat shapes forming together a square shape (five triangles: two identical large, two identical small and one medium triangles; a small square and a parallelogram). It was originally invented in China at some unknown year in history, and then carried over to the world by trading ships in the early 19th century (Wang and Hsiung, 1942; Read, 1965). In particular, assuming that the small square has an area of one unit square then each large triangle has an area of two unit square and each small triangle of an area of half unit square and medium triangle of an area of one unit square and a parallelogram have an area of one unit square too.

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