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First year mathematics undergraduates' settled images of tangent line.

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Summary: This study concerns 182 first year mathematics undergraduates' perspectives on the tangent line of function graph in the light of a previous study on Year 12 pupils' perspectives. The aim was the investigation of tangency images that settle after undergraduates' distancing from the notion for a few months and after their participation in university admission examination. To this end we related the performances of the undergraduates and the pupils in the same questions of a questionnaire; we classified the undergraduates in distinct groups through Latent Class Analysis; and, we examined this classification according to the "Analytical Local," "Geometrical Global" and "Intermediate Local" perspectives on tangency we had identified among pupils. The findings suggest that more undergraduates than pupils demonstrated "intermediate perspectives on tangency." Also, the undergraduates' settled images were influenced by persistent images about tangency and their prior experience in the context of preparation for and participation in the examination. (Contains 2 figures and 5 tables.) (ERIC)

Classification: I25 C35

Keywords: geometry; student attitudes; undergraduate students; mathematics tests; graphs; concept teaching; generalization; college entrance examinations; transitional programs; questionnaires; cluster grouping; mathematics achievement; comparative testing; geometric concepts

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