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**Experimenting an object-oriented teaching of function. (Una experiencia de enseñanza del objeto función.)**

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Previous investigation has reported that students, instructed about the theorem of maximum and minimum reached by a continuous function on a closed interval, most generally adopt an algorithmic conduct applying it to a differentiable function: They start from an algebraic expression and obtain its critical values, even if those lie outside of the interval to be considered. Our hypothesis was this conduct, alike to different manifestations mentioned by other searchers, should result from a lack of meaning in the concept of function itself. Therefore, we have designed an experiment, intending to expand the meaning of the concept of function. We chose, as an action project, the modelling of an easy-to-understand physical situation, an inflatable sphere in a recipient containing some liquid, which allowed introducing a function in a not merely algebraic form, but in a way more similar to the historical approach that implies to study interconnected variables. We decided to implement three successive stages in our experiment: descriptive, quantitative, and generalizer. The purpose was to favour the use of various semiotic registers in order to express functions and their properties. After the two-week experiment, the assessment clearly demonstrates students' enhancement in the knowledge of functions. Most (17 out of 21) succeeded in partially or totally solving a problem reported in previous studies as mishandled.

*Classification:* I15 D45 C35

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