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**Is the derivative a function? If so, how do we teach it?**

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Summary: This study investigated features of instructors' classroom discourse on the derivative with the commognitive lens. The analysis focused on how three calculus instructors addressed the derivative as a point-specific value and as a function in the beginning lessons about the derivative. The results show that (a) the instructors frequently used secant lines and the tangent line on the graph of a curve to illustrate the symbolic notation for the derivative at a point without making explicit connections between the graphical illustration and the symbolic notations, (b) they made a transition from the point-specific view of the derivative to the interval view mainly by changing the literal symbol for a point to a variable rather than addressing how the quantity that the derivative shows, changes over an interval, (c) they quantified the derivative as a number using functions with limited graphical features, and (d) they often justified the property of the derivative function with the slope of the tangent line at a point as an indication of the universality of the property. These results show that the aspects of the derivative that the past mathematicians and today's students have difficulties with are not explicitly addressed in these three classrooms. They also suggest that making explicit these aspects of the derivative through word use and visual mediators, and making clear connections between the ways that the quantities and properties of the derivative are visually mediated with symbolic, graphical, and algebraic notations would help students to understand why and how the limit component for the derivative are illustrated on graphs and expressed symbolically, and the derivative is expanded from a point to an interval, and properties of the derivative are investigated over an interval. More explicit discussions on these ideas perhaps make them more accessible to students.

*Classification:* I40

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