

MSIS-Kondrashov: Redesigning Calculus 1, and the Unexpected Benefits of Collaboration

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We redesigned our Calculus 1 course to cover derivatives before limits, to help students appreciate the purpose of calculus before wrestling with the logical foundations. This required throwing out all previous teaching materials and starting from scratch, which created many unexpected opportunities to incorporate pedagogical best practices and personal authenticity into our lessons. In the end, though we saw increased student mastery (measured by success in the subsequent course) and better student feedback, the benefits from the specific goals of the course redesign were dwarfed by the benefits of the collaboration itself. We both found that our stress levels had plunged and our job satisfaction had skyrocketed. Since then, we have successfully applied the same lens to other courses, and we have worked to foster collaboration across our department and beyond, by establishing collaboration teams and spaces, and by engaging with physics, biology, chemistry, and engineering faculty.