There are many important learning goals associated with upper-division laboratory instruction; however, until recently, relatively little work has focused on assessing the impact of these laboratory-based courses on students. As part of an ongoing investigation of student learning in upper-division electronics courses, we have been examining the extent to which students enrolled in these courses develop a robust and functional understanding of both canonical electronics topics (e.g., diode circuits) and foundational circuits concepts (e.g., Kirchhoff's laws). This focus on conceptual understanding is motivated in part by a large body of research revealing significant student difficulties with dc circuits at the introductory level and by expectations that students develop the ability to build practical circuits for real-world applications. Recently, we have extended the scope of our investigation to include more laboratory-focused learning goals such as the development of troubleshooting proficiency. Specific examples will be used to illustrate the ways in which this research may inform instruction in electronics.