

Abstract Submitted
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Material and Virtual Workspaces in Physics Research CHAD WICKMAN, CHRISTINA HAAS, Department of English, Kent State University, PETER PALFFY-MUHORAY, Liquid Crystal Institute, Kent State University — A growing body of research has examined the potential for computer-based tools to improve the quality and scope of physics education. Yet, few studies have investigated how experienced scientists deploy those tools in the conduct and communication of their work. Based on a study of text production in liquid crystal physics, I will discuss how specific applications, like LabVIEW, mediate the practice of experimental research. Findings suggest that experimentation involves a complex negotiation of material and virtual constraints and that, as a result, a concept of scientific literacy must account for the processes through which scientists visualize, display, and characterize their objects of study symbolically and textually. This approach, in examining the relationship between the material and virtual in a modern scientific workplace, ultimately offers insight into education that prepares students to undertake and communicate research in dynamic, multimedia laboratory environments.

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