

A Hybrid Operating Room in the Making

Coordinating the Introduction and Use of New Technology

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New technologies are often introduced hoping to achieve cost reductions, efficiency improvements, and product/service quality increases. However, when many of the currently emerging technologies are employed in practice, they can also bring unintended consequences to the workplace, even having the potential to fundamentally change how work is organized and coordinated. Making these new technologies work in practice thus presents a major challenge. These dynamics are especially prevalent, and important to study, in the healthcare context, traditionally organized functionally, i.e. around discipline-based specialization, but which is now being reorganized around multidisciplinary departments and teams. One important part of this reorganization is technological advancements, which have often been treated as if fulfilling promises to achieve increased and improved healthcare delivery, as long as these technologies are better and more expensive. However, as technologies are frequently not just integrated into existing and traditional practices or ways of working, but can also potentially challenge or disrupt work practices and coordination, more is required than simply having excellent properties built into these technologies, or individual brilliance or heroism, to make them doable in practice.

This study further builds on and explores these insights and dynamics by adopting a longitudinal field-study, between 2015 and 2019, of both the introduction and use of an iMRI Hybrid OR, a novel technology used in neurosurgery and enabling the combining of intraoperative high-resolution MRI images taken *during* surgical procedures, which was impossible before. As this new technology accommodates the traditionally-separated healthcare practices of neurosurgery and MRI, new configurations of technological tools and healthcare professionals need to be aligned and integrated. Thus, the following question was asked: How is the introduction and use of technology coordinated during conditions of merging two previously-separated healthcare practices? This study found that making the new technology doable was not about greater skills, superior resources, or top-management support, but about the copious amounts of time and energy that healthcare professionals spent on aligning various interdependencies, i.e. coordinating. The study shows how the introduction and use of technology was coordinated through the reconfiguration of the social setting and the physical space, which brought and required a new kind of coordinating, i.e. *coordinating as an overlapping professional domain*, where an *in-depth common understanding* and a *spatial awareness* proved important. In demonstrating this, the study makes a number of contributions; to the literature on coordination, to the literature on professional work and the introduction of technology, and to practice.

Keywords: coordination, professions, healthcare professionals, new technology, introduction and use, social setting, physical space, coordinating as an overlapping professional domain, in-depth common understanding, spatial awareness