Nurses’ conceptualization and learning of health technology used in practice: An Actor-Network Theory analysis

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Abstract Conceptualizations of health technology in the nursing profession have traditionally been presented in essentialized fashions, favouring either socially-centric, or, techno-centric perspectives. In this qualitative research study, an Actor-Network Theory lensed analysis was used to explore how nurses conceptualize and learn about health technology utilized in practice. Insights and preliminary results stemming from the initial stages of the research study are presented.

Background Examinations of how nurses adopt and use technology have become popular topics of exploration by nursing researchers. A common theoretical approach used to examine technology acceptance and utilization by nurses is the Technology Acceptance Model (TAM) which was initially developed two decades ago by researchers in the Management Information Systems discipline. Recently, examples of TAM-based evaluations of nurse-technology use have begun to penetrate the nursing and health literature. According to Orlikowski, models like the TAM have provided significant insights into the role and function of technology within organizational settings, but their limitations are apparent when examining technology from different ontological lenses. A key weakness purported by Orlikowski of diffusion-based approaches of technology adoption is that the “technology is treated as a matter of interest only in certain particular organizational circumstances”. These types of approaches generally privilege either the human (socially deterministic) or technology (technologically deterministic) perspective instead of examining the entire and complex entanglement of “the social and the material …in everyday life”. Orlikowski advocates for the use of relational ontologies to assist in exploring the interrelated dynamic between humans and technology.

Theoretical Underpinnings Relational ontologies accept and appreciate the mingling of both the social and the material (sociomaterial). Actor-Network Theory (ANT) is one such theoretical perspective which subscribes to a sociomaterial perspective. ANT advocates that both human and non-human (e.g., computers, pencils, automobiles, etc.) participants (or actors) should be viewed in symmetry (or as equals) during analysis. Privilege in the analysis is not automatically prescribed to either the human or non-human actors due to the dynamic nature of actors negotiating amongst themselves. Ultimately, the outcome of the negotiation dictates the strength or importance a given actor will have in the analysis.

Study Purpose The purpose of this study was to explore how nurses conceptualize and learn to use health technology in their practice.

Methods A qualitative, semi-structured interview method was used in this study. An initial purposeful sample of nurses (n = 7) from various clinical, educational, and experiential backgrounds were selected to provide insights into their use of health technology in practice. The constant-comparative technique guided by an ANT perspective was utilized to facilitate the data analysis.

Results The preliminary results of this ongoing study have yielded a few important concepts to date. It would seem that the context (both past and present) from which nurses are situated influence how participants conceptualize various technologies used in healthcare. Similarly, the notion of ‘context’ from which a nurse is situated appears to be multifaceted construct, including social, technical, and geographical considerations. Second, the process from which technology was learned and eventually utilized seems to be enabled by various translational experiences inspired by a mixture of formal, informal, and spontaneous learning instances. These requirements, although typically individually-dependent, further demonstrate the entangled socio-technical nature of technology use by nurses. Further data collection and analysis is currently ongoing.

Conclusion Health technology is reported as a multifaceted construct that is both conceptualized and exercised by nurses in various fashions. Nurses included in this ongoing study have outlined their various relationalities and perceptions of health technology, and subsequently, highlighted a number of unseen human and non-human actors underpinning both technology learning and use. The researcher will aim to continue to refine these insights with further data collection and analysis into 2012.

References