How do medical students learn technical proficiency in hospitals? The role of learning networks – Dr Alex Harding

Over 85% of clinical learning takes place in hospitals and the last sustained observations took place over 25 years ago. A large proportion of this learning comprises informal or off-timetable learning - this has escaped detailed attention and forms the focus of this study. I adopt a focused ethnographic approach, using quasi-participant observations of third-year medical students over two years to investigate this type of learning. Observations reveal repeating types of learning episode presented as vignettes and these are analysed using Actor-Network-Theory (ANT), a branch of material semiotics.

The analysis reveals a microstructure to clinical learning, articulated as a series of short-lived learning networks comprising interactions between human and material actors.

A new vocabulary is necessary to describe these interactions. Here, actors exert influence through physical and non- physical properties and this results in various types of relationship patterns between actors. A learning network is formed when the student actor interacts with a knowledge source actor (usually a patient).

Students spend the majority of their time trying to initiate learning networks and the majority of their attempts fail. Material actors figure prominently and frequently inhibit learning network formation.

Within learning networks, different actor combinations produce a variety of learning processes ranging from participative to dissociative. The varying learning processes can generate various learning opportunities for students. These often include opportunities to practise verbal skills but seldom generate opportunities for students to practise practical clinical or procedural skills. For learning to result from the opportunities generated through networks, it appears that student presence in the clinical environment must be acknowledged.

No overarching principle accounting for learning is discernible at this level. Instead, learning appears as a complex, fluid activity. Use of networks, with an internal structure of actors, relationships and processes may usefully account for this complexity.

The results have been used to inform considerable curricular change at the observation site.