**7D1 (18663)**

**Using self-regulated learning as a perspective to view clinical activities in the clerkships**

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**Introduction**: Undergraduate medical students face a challenge with the transition from learning in the classroom to developing competence in a clinical environment. Research suggests this is because during clinical training (clerkships) students need to employ more active learning strategies and self-regulate their learning. The importance of this was also described recently in an AMEE guide (1). Good self-regulated learning is a skill that needs to be developed by students and supported by the curriculum (2). However, understanding and supporting self-regulated learning processes in students is a big challenge, because self-regulation is a complex interactive process, and we know very little about how students regulate their own learning, especially outside the formal curricular elements of the clerkships, making it difficult to support this process. This study aims to identify 1. what everyday activities students undertake to optimally learn in the clerkships, 2. what goals and types of regulation influence these activities, and 3. what factors support or hamper the choice of self-regulated learning activities.

**Methods**: We conducted semi-structured interviews with 13 clerks from two Dutch university medical centers and their affiliated hospitals. The participants were purposively sampled to ensure a wide range in age, gender, experience and current clerkship. Before the interview, participants completed a day-reconstruction diary, to help them memorize their activities on the previous day. This diary was used as a guide for the interviews, though other interesting information was also pursued. The interviews were transcribed verbatim and iteratively analyzed using template analysis.

**Results**: Several groups of (mental and physical) activities could be identified e.g. activities focussed on learning through interaction, activities undertaken to optimize the learning environment/experience, formal curricular activities, activities directly involving patient care, organizational activities and individual learning activities. The activities undertaken by a clerk were influenced by goals and the type of regulation. Clerks reported that the activities they undertook were either because they wanted to do it (autonomous self-regulation) or because they felt they had to do it (controlled self-regulation). Furthermore the goal of an activity also influenced the activity undertaken. Some activities had a clear performance goal, others had a clear learning goal and some were a combination of both. Several factors were found that support or hamper self-regulated learning, including personal factors (affect and previous experiences), interpersonal factors (hierarchy, presence of peers), and contextual factors (possibility to actively participate in an activity, opportunity to work with patients).

**Discussion and Conclusions**: In our study we found that the types of activities clerks undertake are influenced by the type of regulation, e.g. more autonomous or more controlled self-regulation. Autonomous self-regulated activities often created opportunities for clerks to work towards their own goals, possibly leading to higher motivation. Externally controlled self-regulated activities often did not help clerks to work towards personal goals. We suggest that self-regulated learning could therefore be improved by a better communication between clerk and supervisor about one’s personal goals and the goals of a (controlled self-regulated) activity in the clinical workplace.


**7D2 (18631)**

**Contrast effects in assessor cognition: Words as well as numbers**

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Introduction: Judgement-based assessments of clinical performance are vital to current assessment strategies, but suffer from high inter-assessor score variability. Assessor cognition research aims to understand the cognitive origins of these variations. Our prior research has shown that assessors’ scores show a moderate “contrast effect”: scores are biased away from the standard of preceding performances such that trainees seem particularly good when preceded by poor performances and vice versa. This work extends this investigation, examining whether contrast effects occur following a single prior performance; whether prior mixed (rather than consistently good or poor) performances cause contrast effects; whether early or recent prior performances are particularly influential; and whether the prior performances influence the content and/or valence of assessors’ free text feedback as well as assessment scores.

Methods: Consultants and registrar doctors were randomised to 3 groups in a blinded internet-based experiment. All participants viewed the same videos of good(G), borderline(B) and poor(P) performances by first-year postgraduate doctors consulting with a patient in varied order: Group 1:G,B,P; Group 2:P,G,B; Group 3:B,P,G. All then viewed the same intermediate performance. Participants provided scores and written feedback after each performance. The overall valence of feedback for each performance was rated on a 7-point scale (-3:highly negative to +3:highly positive) by 2 blinded researchers. The feedback was also segmented into discrete phrases and independently coded using the framework from our prior work2. To assess valence, each segment was labeled as “positive(+1)” or “negative(-1)” and the sum for each performance created a “PosNeg rating”. To assess content, coded segments were compiled two domains: “Information skills” and “Interpersonal”. Between-group comparisons were made for these variables and for the ratings assigned.

Results: N=61. The good performance was scored higher by Group 1 (Preceding poor performance: 5.01 (95%CI:4.79-5.24)) than Group 1 (Unbiased: 4.36(4.14-4.60);d=1.1; p<0.001). The borderline performance was scored lower by Group 1 (Preceding good performance: 2.96 (2.56-3.37)) than by Group 3 (Unbiased: 3.55 (3.17-3.92);d=0.67;p=0.04. The poor performance had the weakest manipulation (either unbiased or preceded by borderline performance) and showed no difference. Scores on the final (intermediate) performance for which all participants had the same prior exposure in different orders showed no difference across group, thus indicating an averaging effect of preceding experiences. Feedback coding agreements were high [k=0.77-0.96]. The coding did not show between-group differences in content, but both measures of feedback valence showed between-group differences comparable to the numeric scores assigned (e.g., PosNeg rating for the Good performance in Group 1 (2.6 (1.3 - 3.8)) was low relative to Group 1 (6.1 (4.8-7.4 ) ;d=1.27;p<0.001.

Discussion and Conclusions: Contrast effects occurred even after a single prior performance with previous exposure influencing scores and the valence of assessors’ feedback, but not feedback content. Mixed recent experience averaged out rather than creating primacy or recency effects. Combined, these findings continue to suggest that assessors norm-reference whilst judging performance. As both the feedback and scores trainees receive during assessments may be biased by just one preceding performance, comparisons with other trainees may hinder both performance measurement and educational development.


7D3 (18819)
Action research to improve Foundation Doctors' experience of Radiology practice

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Introduction: The United Kingdom Foundation Programme aims to ensure that newly qualified doctors, Foundation Doctors (FDs), acquire basic workplace competences essential for good medical practice (1). Previous literature focuses on Radiology teaching for medical students, rather than for FDs. As their decisions will affect countless patients, I feel it is important to help FDs acquire the Radiology skills needed to optimise their patients' clinical care, throughout their working lives. I was motivated to explore how best to do this, by my own varied background in Medicine, Radiology and Foundation Educational Supervision in the National Health Service (NHS). My research was set in a large NHS teaching hospital, with its own affiliated medical school. I aimed to 1. understand how FDs learn to practise Medicine informed by Radiology. 2. discover effective ways of teaching Radiology and its practice. 3. enhance patient safety through multidisciplinary teamwork involving Radiology and clinical specialties.

Methods: In carrying out this action research, a stepwise multimodal approach was followed. I started with a group interview of FDs, then used their feedback to construct white-space questionnaires that I sent to FDs and Radiologists with an interest in Education, in my hospital. I planned Teaching sessions, based on the FD group interview and the questionnaire responses. I evaluated how teaching could be optimised, by interviewing two radiologists and one Foundation School Lead; and by asking three FDs to keep journals of their interactions with Radiology.
Results: Data from the focus group, the questionnaire responses, the interviews and the FDs’ diaries were analysed thematically. Many findings triangulated each other. Common themes were the importance of 1. informal teaching, supplementing formal teaching. 2. Radiology teaching in clinical contexts, multidisciplinary meetings and Clinical Governance settings. 3. FDs learning to discuss and request investigations directly from radiologists.

Some opinion diverged. Some radiologists felt FDs’ awareness of Radiology and radiation protection was often suboptimal. FDs and radiologists agreed that the best Radiology teaching was radiologist-led. However, unlike radiologists, FDs felt that some clinician-led Radiology teaching was of a high standard.

Discussion and Conclusions:
My findings reveal that FDs learn some Radiology from books, journals and the internet. However, they learned best through scaffolded learning in clinical settings; involvement in critical incidents; and opportunistically, by participating in multidisciplinary communities of practice (2), and understanding the role that Imaging plays in caring for the whole patient. However, medical power hierarchies, which confine FDs to a ‘subaltern’ status, may impact adversely on learning interactions between FDs, senior clinicians and radiologists. I uncovered many misunderstandings in radiologists’ and FDs’ perceptions of each other. My research explores ways of improving FDs’ status, and of building bridges between Radiology and FDs. I discuss potential solutions to problems that I encountered: such as teaching by Radiology registrars, radiographers and senior clinicians, to supplement consultant radiologist-led teaching for FDs. Radiologists can help FDs’ learning by welcoming them into multidisciplinary communities of practice, actively considering FDs’ learning needs, and helping them recognise the importance of Imaging in caring for the whole patient.

References:

7D4 (18600)
A qualitative study of medical students’ experiences of international health electives to developing countries

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Introduction: Every year thousands of medical students worldwide embark on international health electives (IHEs) to broaden their experience of medicine in the developing world. While there is much commentary and opinion reported in the extant literature on IHEs, there is a dearth of empirical research that explores the experience and the value of these IHEs to medical students. Most students who participate in these IHEs in Ireland are members of medical student IHE societies. There are varying levels of interaction between students and their medical schools when planning and carrying out these experiences. This study aims to explore the experiences of a sample of medical students who completed IHEs in developing countries in 2012.

Methods: For this qualitative study students were recruited using online notice-boards of medical student societies. Purposive and snowball sampling were used to find students from different medical schools in Ireland, as the arrangements for IHEs in each location differ greatly. Sampling also sought to include students who had travelled with medical student IHE societies and others who had travelled independently. Anonymised, one-on-one interviews were then conducted with participants. These were then transcribed and analysed thematically. Interviews were conducted until saturation was reached.

Results: There were twenty responses to the online study advertisement, thirteen of these were selected for interview. One participant was added by snowball sampling. Five of the six medical schools in the country had representation in the study. The main themes identified were the perceived benefits of IHEs, difficulties with the distribution of charitable donations, the emotional impact on students, awareness of scope of practice, and issues with the current structure of IHEs.

Discussion and Conclusions: The informal relationship that currently exists between student societies and the medical schools results in many uncertainties around the conduct of IHEs. The issues of accountability and lack of supports for students are very important. Clearer guidelines and identification of learning outcomes for students would be helpful. The findings on charitable donations were not previously reported in the literature. This study is relevant to medical schools and medical students internationally.

7D5 (18821)
Is not sleeping okay? A grounded theory study of residents’ decision-making regarding how to spend their off duty time

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Introduction: Work hour restrictions are intended, in part, to promote physician wellbeing, but one may not
straightforwardly lead to the other. Particularly in North American residency training programs, where work hour policies are evolving and debated, there is a growing sense that "what [residents] do, or fail to do, with [free] time may have real implications for ... [their] health and well-being" (Baldwin, Daugherty, Ryan & Yaghmour, 2012, p 401). Resident decisions about how to use off duty time are not straightforward, evidenced by research characterizing the postcall 'stay-or-go' dilemma and reports of resident noncompliance with duty hour policies. While educators assume that residents should use their off duty time in particular ways (e.g., sleeping, studying), there is little research into how residents actually use this time, and the reasoning underpinning their activities. This study sought to describe residents’ postcall activities, to understand how they made these decisions, and to theorize the relationship between their activities and the goal of resident wellbeing or recovery from fatigue.

Methods: We used a constructivist grounded theory approach to qualitative research due to the socially-situated nature of the studied phenomenon. With research ethics approval, we conducted 24 individual semi-structured interviews with Canadian residents from six surgical and non-surgical specialties across three university-affiliated hospitals. Interview transcripts were analyzed alongside data collection in an iterative fashion, in order to support theoretical sampling to sufficiency (Charmaz, 2006). One analyst coded the data independently and met regularly with a second analyst, using constant comparative methods to identify and refine key themes (Charmaz, 2006). Reflective memo-writing, field notes and diagramming were used to ensure methodological rigour (Charmaz, 2006).

Results: Residents talked passionately and at length about how they decide what to do with their postcall time. The predominant theme identified in the analysis was that of "Making trade-offs". Trade-offs involved residents choosing between two or more seemingly incompatible yet equally valuable alternatives. These trade-offs represented choices about how to spend both time and energy while regaining control of their lives. Participants exhibited three different orientations to their trade-offs depending on the situation: they could be oriented to fatigue management, to normal life, or to professional development. These orientations were neither stable, nor were they program-specific. However, it was more common for residents in surgical programs to espouse an orientation towards professional development.

Discussion and Conclusions: In our study, residents’ response to competing demands on their postcall time was one of making trade-offs between alternatives. In contrast with assumptions in the literature about ‘appropriate’ use of postcall time, residents did not always prioritize sleeping and studying. However, their rationale for sometimes trading off these alternatives in favor of activities such as socializing and keeping appointments resonates with theories of recovery in high stress work environments. According to these theories, off duty leisure activities that provide a distraction from workplace demands are critical for managing wellbeing while on and off duty. This study offers new insights into how residents use their off duty time. The notion of making trade-offs as a self-regulating mechanism contributes to the ongoing educational discussion about the relationship between off duty activities and resident wellness.