Introduction: Little has been written about the value of the written comments that medical students are traditionally asked to provide to evaluate the teaching they receive. Some have suggested that such comments can be used to guide faculty development, while others feel they are too subjective to improve teaching habits and practices. The aim of the present study was to examine written teaching evaluations to understand how teachers’ behaviours and performance are conceptualized by medical students.

Methods: All written comments collected from students about teachers in the two Surgery clerkships at our school in 2009/10 and 2010/11 were collated and anonymized. A grounded theory approach was used to analyze this dataset, with iterative reading and open coding to identify recurring themes. A framework capturing all variations observed in the data was generated until data saturation was achieved. Domains and subdomains within the framework were named using an in situ coding approach.

Results: The conceptual framework generated contained three main domains: ‘Physician as Teacher’, ‘Physician as Person’ and ‘Physician as Physician’.

Under the ‘Physician as Teacher’ domain, students commented on specific acts of teaching (eg. discussions, asking questions, explaining) and subjective perceptions of an educator’s teaching values (eg. passion, learner-focused, supportive). Under the ‘Physician as Person’ domain, students commented on elements of their educator’s physicianship, including communication and collaborative skills, medical expertise, professionalism and role modeling. Under the ‘Physician as Person’ domain, students commented on how both positive and negative personality traits impacted their learning.

Discussion and Conclusions: This framework describes how medical students perceive their teachers and how they use written language to attach meaning to the behaviours they observe. We plan to share this work with our students and teachers in order to foster a shared understanding of the teaching enterprise. This framework will be used to help students provide more constructive feedback to teachers, and to assist in faculty development efforts aimed at improving teaching performance.


Improving diagnostic and therapeutic decision-making skills by test-enhanced learning in future physicians: A randomised controlled cross-over trial

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Introduction: Diagnostic and therapeutic decision-making skills are a prerequisite to ensuring that patient management is efficient and safe. Key feature examinations have been specifically designed to assess medical students’ mastery of these skills. In addition, recent educational research suggests that in addition to facilitating a critical appraisal of student performance levels, testing can be used to enhance long-term retention (‘direct testing effect’). This study assessed whether repeated formative testing with key feature questions is more effective than repeated case-based learning in fostering diagnostic and therapeutic decision-making skills.

Methods: Fourth-year undergraduate medical students at Göttingen University Medical Centre were invited to participate in a randomised cross-over trial. Following an initial key feature examination, students attended ten weekly computer-based seminars during which they studied patient case histories covering general medical conditions. During alternate weeks, cases were either presented as long narratives (control items) or broken into five sections, each of which was followed by a key feature question on the next step in patient management (intervention items). Whether students received the intervention or control items first was randomised between two groups of students, and intervention and control item content was also counter-balanced between these two groups. A within-subject comparison of student performance on intervention and control items was assessed in an exit exam at the end of term as well as in a retention test six months later.

Results: Of 124 eligible students, 87 provided data for all three exams (response rate 70.2%). Students spent significantly more time on intervention items than on
control items (21:47 +/- 05:27 mins vs. 13:30 +/- 05:24 mins per seminar; p < 0.001). Cronbach’s alpha of the entry, exit and retention exam was 0.663, 0.905 and 0.895, respectively. In the exit exam, all but one item yielded a discriminatory power of >0.3, and in the retention test, only three out of 30 items had a discriminatory power of <0.3. Mean percent scores in the entry, exit and retention exams were 22.6 +/- 11.3%, 53.0 +/- 24.4% and 52.4 +/- 23.4%, respectively. At the 6-month follow-up, students achieved significantly higher scores in intervention items than control items (56.0 +/- 25.8% vs. 48.8 +/- 24.7%, p < 0.001). Accounting for differences in time between presentation formats in a linear regression analysis also adjusted for sex and general student performance levels did not change the results.

Discussion and Conclusions: Repeated case-based learning augmented with key feature questions is more effective than repeated case-based learning alone in enhancing long-term retention of clinical decision-making skills in general medicine. This study suggests that by implementing longitudinal formative key feature testing in undergraduate medical education, student learning outcome on relevant aspects of clinical medicine can be enhanced.


#5D3 (23652)
Optimism and grit: Key to success in the widening access student’s journey into medical school

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Introduction: Across the world, young people with the academic and personal attributes to successfully study medicine and be doctors face disadvantages associated with demographic factors such as ethnicity, minority group membership and/or low income. Aspiring to medicine and attaining the necessary academic and non-academic entry requirements, are hugely complex, intersecting issues which are tied up with wider societal issues of social justice and equality, and sociological issues of cultural and social capital (Bourdieu, 1986). Previous studies in this area have focused on barriers to successful application to medical school, such as cultural and social norms (Greenhalgh et al., 2006), lack of social or parental support (e.g., Hill et al., 2004; Robb et al., 2007) and/or lack of attainment (e.g., Chowdry and Goodman, 2013). However, in contrast, we were interested in the experiences of “non-traditional” applicants who succeeded in obtaining a medical school place, to explore the individual and social factors which contributed to their achievement.

Methods: Grounded in social constructionism, 14 semi-structured interviews were conducted with medical students from three UK medical schools, who self-identified as being from widening access backgrounds and responded to emails about the study from the research team. Narrative interviewing techniques were employed to capture their lived experiences of getting in to medical school.

Results: Data coding and analysis were initially inductive, using framework analysis. After the themes emerged and after considering many possible interpretative frameworks (Bordage, 2009), we applied the conceptual lens of positive psychology (Seligman, 2000) to the data. Psychological resilience was a common trait in our participants, who bounced back from (the many) challenges in their journeys by using positive emotions such as perseverance, motivation, determination and goal setting to cope. Emotional support from family played a crucial part in this resilience, counterbalancing poor support and discouragement from teachers. While contextual, relational and material factors affected how the journey into medical school played out in facilitative and inhibitive ways, the individual factors of grit and optimism seemed key to success: “I’ve had people tell me that I can’t do this, I can’t do that because I come from so-and-so. But the thing is, I never listen to any of that crap, I move forward, it’s about perseverance”. Further examples of data will be presented at AMEE.

Discussion and Conclusions: This work gives a unique insight into the journey to medical school of “non-traditional” applicants. Our findings are important given the importance of non-cognitive factors in attainment generally, and the importance of resilience in terms of clinician well-being and support. It may be that medical students, who have often fought against the odds to gain a place a medical school, are more emotionally resilient than “traditional students” for whom the journey to medical school tends to be smoothed by social and cultural advantage. If so, widening access may bring specific gains to the medical profession, challenging the dominant discourse of meritocracy within the widening access literature (Trowler, 2008). Further research is required to explore if this is indeed the case.


#5D4 (23705)
Forum for conflict: a qualitative evidence synthesis of touch in healthcare

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Introduction: Touch is integral to clinical practice. It is a significant component of nonverbal communication and a frequently taken for granted activity in medicine. Yet, touch is part of doctors’ everyday practice, from shaking a patient’s hand, to intimate examination, and the performance of procedures. Our objective is to identify, describe, critically analyze, and synthesize the literature on touch in everyday clinical practice; to conceptualize how touch is used in healthcare.

Methods: This study is a qualitative evidence synthesis, using meta-ethnography. Multiple databases (MEDLINE, CINAHL, PsycINFO, EMBASE, SocioFILE, ERIC) were searched using MeSH headings and filters. Papers were critically appraised independently by 2 reviewers using the CASP tool. Thematic data was tabulated to record first order (study findings) and second order (author interpretations) constructs, then discussed amongst the team to develop third order constructs (reviewer interpretations). Team reflexivity informed analysis. The heterogeneous nature of studies challenged synthesis. Studies were grouped per discipline. For each group, a high quality paper was used as the initial focus for study integration, as part of a sensitivity analysis. Findings of each group were then assimilated as a line of argument. Preliminary findings were presented as the study evolved and shared with selected primary authors. In keeping with the methodology, presenting this paper will share findings and continue to test their validity.

Results: Our search yielded 1011 papers; application of exclusion criteria resulted in 369 papers; 27 of which were qualitative (Medicine 4, Dentistry 1, Physiotherapy 2, Nursing 20). The study population in medicine was family doctors. Nursing studies focused on touch with elderly patients or the experience of physical examination; students were video recorded.6 The desired “additional patient information” articulated by the students was transcribed, the specific information requested was grouped by medical interview or physical exam and assessed for relevance to the patient encounter.

Discussion and Conclusions: Touch is a relatively unexplored area of research in healthcare. Family medicine is the only medical specialty reporting empirical research. More examined in nursing, studies focus largely on gender and power relations. Although publications emphasized a need for education on touch, no study has yet addressed how to do this. Future studies will explore physician experiences of touch with a view to informing body pedagogics in medical education.

References:

#5D5 (23718) “A little more time”: A simple question provides insight into student thinking.

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Introduction: Assessment of medical students by standardized patient (SP)-based examinations provides an opportunity for a purposeful review of clinical skills. Examinations are resource intensive, resulting in limitations such as strict time restrictions for the patient encounter. When provided with an opportunity to return to the patient’s room, students frequently “revisit” with the patient to perform additional portions of the interview or physical examination. For this project, we studied students’ descriptions of information they would obtain if given an opportunity for more time with the patient.

Methods: Data from our 2013 and 2014 senior medical student Clinical Skills Examination (CSE) were used for this study. Beginning in 2013, an oral presentation (OP) station was added to our CSE. The OP, a 10-minute post-encounter activity, occurred immediately following a 15-minute SP-based encounter. OPs were facilitated and scored by specially trained SPs. Students were instructed to provide an uninterrupted presentation of the patient, including the differential diagnosis and initial diagnostic plan. Upon completion, students were prompted with the query “if you had more time with the patient, what additional information from the medical interview or physical examination would you obtain?” All encounters were video-recorded. The desired “additional patient information” articulated by the students was transcribed, the specific information requested was grouped by medical interview or physical exam and assessed for relevance to the patient encounter.
Results: Two hundred nine students participated in the 2013 CSE, 217 students participated 2014 CSE. Useable data were available for 96.7 and 97.6% of students respectively. Overall performance score on the OP station was satisfactory for 72.2% (2013) and 88.2% (2014) of students. In 2013, 41% of students requested additional medical interview information, and 85% suggested that there were additional physical examination maneuvers they would perform. In 2014, 65.5% requested additional medical interview information and 42.5% described additional information from the physical exam they felt would be helpful. Students who stated that “nothing additional was needed” were more likely to have received an unsatisfactory overall score on the OP station in the 2013 exam. Of note, the patient encounter that served as the basis for the OP station was different in 2013 and 2014; the 2014 scenario prompted a differential diagnosis more focused on a single organ system.

Discussion and Conclusions: Our findings build on prior work related to “revisit” activities during CSEs. Time for reflection outside of the patient room (typically during the note writing process) allows students to identify important missing patient details that may help in the decision making process. In our current work, students had limited time for quiet reflection before engaging in an oral case presentation. Our findings suggest that even during the active process of the oral presentation of a patient, students were able to reflect on the patient encounter and recognize addition information that would be helpful diagnostically. SP facilitators commented that the “more time” query was helpful in their assessment of the students. Actively inviting the student to share this information provides an additional opportunity to observe critical thinking skills.