

Chapter 4

Work-based, Accredited Professional Education: Insights from Medicine

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Introduction

Medicine is a health care profession which has much in common with the teaching profession. Health care professionals make the care of patients ‘their first concern’ (General Medical Council 2006) just as teachers put the education of students first. Health care, like teaching, may be practised in for-profit organisations or not-for-profit ones, but professional ethics are expected to transcend the business model of the institution that employs a doctor or teacher. There is an element of risk to being a health care professional, just as actions by teachers on behalf of students may threaten their licensure or health. Medicine differs from other health care professions, but perhaps not from teaching, in that practice is expected sometimes to be standard and sometimes non-standard. Doctors are expected to adhere to protocols, but they are also expected to forge solutions to unique problems, which is a justification for it being such a ‘knowledge-rich’ health care profession. Teaching, also, is knowledge-rich.

Parallels between medicine and teaching do not end there. Medical professional ethics make it explicit that doctors should be teachers of other doctors and medical students (General Medical Council 2006). But it is there that differences between medicine and teaching become apparent. Clinical teachers are almost always medical practitioners first, so the parallel would be with a chemist or physicist who did a bit of secondary school teaching as a ‘spin-off’ of their practice, rather than a typical chemistry or physics teacher. From a communities of practice theoretical perspective

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(Wenger 1998), we have recently framed clinical teachers as having two practices: a practice of patient care and an educational practice (McLachlan et al. 2012). Different doctors give those two practices different priorities and are more or less successful at aligning them with one another (Bell et al. 2013). To make matters more complicated still, doctors may also be managers and/or researchers, in which case teaching can be the ‘safest’ of several practices. Education is all too often ‘at the bottom of the food chain’ in medicine as it can be in universities, but hopefully not in schools.

Teachers and teacher educators reading this chapter may find medicine a confusing exemplar because there are two strands in our narrative which can easily get tangled round one another: learning how to do the job of a doctor ‘on the job’; and learning to be a medical teacher (which may be on or off the job). The first is the more obviously relevant so we will concentrate on it in this section, turning to the training of doctors as teachers later. Learning how to do the job of a doctor and ‘remaining up to scratch’ is often referred to as a ‘lifelong learning continuum’. In reality, the supposed continuum has separate phases, with ‘transitions’ between them. The first stage, which lasts 4–7 years, prepares medical students to perform doctors’ jobs after qualifying. At this stage, people who are not yet part of the workforce learn by shadowing those who are whilst enrolled in higher education courses. The second stage, which lasts 5–10 years, is learning as a ‘resident’ (foundation or specialist trainees in UK parlance). Learners are now part of the workforce but not yet independent practitioners. The third stage, the continuing education of fully trained doctors, helps them keep their skills up to date and finely honed. It starts in their middle age and continues to retirement. For all the effort that has gone into developing work-based medical education, people consistently report that one stage fails to prepare learners adequately for the next stage (Teunissen and Westerman 2011). The result is that people feel as though they are learning the job from scratch when they enter a new phase, despite all their earlier studies; a problem that we suspect is to be found in other professions, perhaps including teaching.

Doctors(-to-be) are not only taught by doctors. Scientists dominate medical students’ early, university-based undergraduate education and contribute at other times as well. Other health professionals and social scientists teach in clinical skills laboratories, where learning is supported by simulation technology. Patients also teach, sometimes in ‘expert’ roles (Hendry et al. 1999), but more often in the passive role of ‘object’ from whom students learn (McLachlan et al. 2012). However, doctors are doctors’ most important teachers because the medical education that has the greatest impact takes place in workplaces, either closely linked to or as part of patient care. A result of having such a variety of teachers in medical schools is that medical students are boundary crossers, learning on both sides of boundaries, which only they ever cross.

The next two sections on codified and uncoded knowledge explore how the medical profession frames and articulates its knowledge base and what types of knowledge it values in order that readers can compare and contrast medicine with their own practice. It treats the education of medical students and young doctors as a ‘theory-in-use’ of medical knowledge. After these two sections, we return to the strand of how doctors learn to be teachers.

Codified Knowledge

Meet Sarah

Sarah is a (fictional) junior resident; in other words, she is in the second of the three stages of a medical lifetime described above. When she was a medical student, teachers frequently tested her knowledge during teaching sessions. She also passed a number of high stake exams: five 100-item multiple choice questionnaires, ten short written answer exams, a few oral question-answer exams, a long essay exam, three large project reports that were followed by a defence (viva), and three long case clinical exams. She did well in medical school based on her grades from all those assessments and qualified. Recently, she passed the first part examination for specialist certification, which was a multiple-choice assessment of declarative knowledge, including the basic biomedical sciences.

Erudite, Codified Knowledge

Medicine established its powerful position amongst health professions by developing an erudite corpus of knowledge and making high academic performance an entry requirement. Codified knowledge has been valued over practice-based, tacit knowledge since medieval times, when doctors left barber-surgeons and apothecaries to do the menial work of treating patients. The high value given to codified knowledge is apparent in modern medical education practice as well. In his institutional ethnography of a medical school, Sinclair identified a question-answer routine as an archetypal feature of medical students' learning (Sinclair 1997). Typically, such questions demand a single 'right answer', which Biggs and Tang (2007) described using the cognitive term declarative knowledge. Medical textbooks, which students and young doctors are expected to learn more-or-less by heart, provide the answers to such questions, often in long lists. Declarative knowledge is acquired, also, in state-of-the-art lectures given by revered experts and grand rounds, when doctors pit their erudition against one another around an exemplar patient case. Declarative knowledge is demanded when medical students and young doctors give case presentations at patients' bedsides. It is a criterion of success in long case clinical examinations, a time-honoured genre in which students are asked to examine a patient and answer questions about anatomy, physiology, pathology, medical terms, expected symptoms, clinical findings and their frequencies, plausible and rare diagnoses, complications, treatments and prognosis. Thus the medical profession espouses a broad and deep corpus of codified knowledge, though a new discourse of curriculum has led to widespread adoption of competency-based medical education.

Competency-based Education

The competency discourse signals a change in how the medical profession frames the knowledge it values. Competency-based curricula are written as sets of learning outcomes or competencies, which must be clearly stated and unambiguous. They are expressed as behaviours that learners must be able to demonstrate, the subject matter those behaviours pertain to, and the contexts in which the behaviours must be demonstrated (Biggs and Tang 2007). Competency-based education was trumpeted as a new approach to medical education at the turn of the millennium (Harden et al. 1999), though we have been able to trace a more or less unbroken line of inheritance from behaviourist psychology of the 1940s down to its recent revival (Mørcke et al. 2012). The revival reasserted a view expressed in earlier years that an outcome specification could benefit curriculum design, assessment, programme evaluation, and accountability. So, the competency movement progressed quickly from advocacy to worldwide implementation (Harden 2007; Frank and Danoff 2007; Cooke et al. 2010).

Back to Sarah and her education

Sarah, who is now three years on from qualifying as a doctor, has chosen to follow a specialty education in general internal medicine. She followed a competency-based curriculum in medical school and continues to do so during specialist training. To add to her exam successes, she has passed an objective structured clinical examination testing her behaviour in 20 different standardised and simulated settings, which was a requirement for entry into higher specialist training. She did well on that one as well. Furthermore, she has dutifully filled out her learning portfolio, documenting her competence as a communicator, co-operator, leader, health promoter, academic, and professional. Her ability to perform certain clinical procedures has been assessed in workplaces and she has been through a multi-source feedback (anonymous ratings of professional attributes by ten co-workers) and a 'case based discussion', where she explained the clinical reasoning that lay behind her management of a patient. The specialist physician she currently works for is her 'educational supervisor'. Sarah recently had an appraisal when her supervisor reviewed her acquisition of competence to check she is progressing satisfactorily.

One reason competency-based education was avidly adopted is that performance outcomes offered medicine an escape from an unhappy marriage to declarative knowledge. As can be seen from Sarah's story, competencies broadened doctors' abilities from giving right answers to possessing and being able to enact skills, functional knowledge, and attitudes. Those broader types of learning outcome aligned better with vernacular experiences gained in workplaces than a theory of knowledge that valued the abstract and the abstruse, and yet they are still codified.

Competency-based education, we suggest, has made medicine seem clearly defined and safe. Society has put doctors' accountability for delivering safe and effective

care high on the agenda of medical schools. Testing the competencies of medical students and doctors is an attractive way of demonstrating social accountability and ensuring the profession upholds its own high professional standards. With the shift to competency-based education and its focus on demonstrable behaviours, a shift towards more performance assessment and an assumption that such assessments can test professionalism has followed. The snag, however, is that performance assessment of skills and functional knowledge cannot truly distinguish good from less good doctors. Society wants professional competence to include affective qualities like empathy, altruism, confidence, self-reflection, an ability to cope under stress, and upholding professional values. Long before the recent advocacy of competency-based education began, it was acknowledged that complex personal and professional attributes—being a good doctor—could not be broken down to demonstrable performance outcomes and assessed objectively. Competency-based education can meet society's demand for accountability but not, it is generally acknowledged, the demand for doctors to demonstrate humane qualities. The recent focus on measuring competencies in the name of patient safety will, inevitably, have unintended as well as intended consequences. It is distinctly possible that what is gained in training and assessing safe doctors may be lost in not educating doctors to be 'good' ones.

To summarise this section, we have reviewed two ways of framing and codifying medical competence, both of which are heavily weighted towards assessment. The first reflects a professional culture, which dates back many years. It frames competence as being able to give the right answer to questions testing declarative knowledge. The second frames competence as the ability to demonstrate proficiency. The first derives from medicine's long cultural history. The second is a response to society's call for doctors to be more socially accountable for their competence. Neither, however, is based on careful scrutiny of the attributes that will enable doctors to perform effectively in practice, as opposed to test conditions. The next section introduces an alternative perspective on professional proficiency and explores how it applies to medicine.

Uncodified Knowledge

We précis here some key points made by Eraut in Chap. 3, which describes the type of professional knowledge called upon in workplaces as ill-structured, in distinct contrast to the codified knowledge valued by medicine's assessment culture and presented in textbooks. The information available to professionals, according to Eraut, is incomplete, ambiguous, and changing. And the goals of professionals are ill-defined, in competition with one another, and shifting. Decisions, which occur in multiple event-feedback loops, are taken within time constraints. The stakes are high, many stakeholders contribute to decisions, and decision-makers balance personal choice with organisational norms and goals. So, the relationship between knowledge and decision-making is not simple. Problems have to be framed in terms of decision-makers' situational understanding. Codified knowledge is less important than personal knowledge, which includes uncodifiable cultural

knowledge. Uncodified knowledge is acquired informally through participation in working practices and tends to be taken for granted.

Some harsh realities of medical work

It is Sarah's first 'on call' shift at a district hospital during her third year of residency. A senior resident, who is supervising her, is also working in the hospital but at the end of a phone, and the specialist who is providing 'cover' to them both is doing so by telephone from home. It is a busy shift, not least because Sarah has repeatedly been paged by the nursing staff on a ward, where a patient who is not in command of his faculties has been abusing nurses. They are demanding that 'a doctor does something' to calm the patient down. That would pose the most experienced doctor, let alone Sarah, a practical and ethical challenge. Meanwhile, she is called to see a patient in the emergency department who has diabetes and a sore on his foot. She knows diabetic foot ulcers can ultimately lead to amputation if they are not handled quickly and appropriately on occasions like this one. She tries to recall teaching she received as a medical student. The action she must take is influenced by a judgment as to whether or not the blood supply to the patient's foot is seriously impaired but how, exactly, does one do that? She must also get an X-ray of the foot to determine if the underlying bone is infected; how, she tries to remember, will she make that judgement when she examines the X-ray? She is inexperienced at doing so. Should she call the senior resident now, later or not at all? The senior resident she is reporting to today has a reputation for making harsh judgements on juniors who 'bottle out' too quickly, but what will the specialist covering them both say if Sarah shows herself unwilling to call for help when in doubt? Should she go 'over the head' of the senior resident, or will that cause even more trouble? Perhaps there is a doctor on call for the diabetes department; how does she find that out? She should probably admit the patient to hospital, but should it be to a medical or surgical ward? If a surgical ward, is it the local practice for such patients to go to a general surgical, orthopaedic, or vascular ward? She should start antibiotics to treat infection in the foot. Is there a protocol that dictates which antibiotics are to be used in this hospital and how can she find that out? There goes her pager again from the ward with the abusive patient. You just don't learn in medical school how to manage patients with diabetic foot problems and you don't learn to do so properly 'on the job' unless you do a diabetic job, which not everyone does. Even then, you find Dr X likes his patients managed one way and Dr Y another. They don't get on well with one another so you get yelled at for making the wrong decision if you don't first find out if the patient's specialist is Dr X or Dr Y. Sarah knows that even people who've completed their accreditation exams are floored by problems they haven't done the right jobs to train them for. Why, oh why, did she have to get a diabetic foot, which she's clueless about, at a moment like this, rather than something straightforward like pneumonia? And **** that pager . . .

Eraut's choice of the term 'learning trajectories' (Chap. 3, this volume) well describes the continuous nature of clinical learning though, as he notes, it is not in conflict with the static term 'competencies', which describes a person's level of attainment at a particular point in time. Table 3.3 in Chap. 3 shows Eraut's eight categories of trajectory, which we now illustrate with clinical examples.

Task Performance

This is the trajectory along which learners develop their ability to perform a wide range of tasks fluently. Those tasks include psychomotor skills, intellectual tasks, and social ones, ranging from examining the blood supply of a diabetic foot, completing a form requesting an X-ray whilst simultaneously answering the telephone, to telling someone their spouse has died and allowing them to express their grief. Clinical tasks are always dialogical because they involve patients, vicariously if not in person, and usually involve collaboration with a range of other people.

Awareness and Understanding

The preceding vignette of Sarah and the diabetic patient with a sore on his foot demonstrates the degree of situational awareness that doctors must develop through experience in workplaces. It shows the broad range of considerations doctors have to take into account when framing clinical problems and the risks of not considering all the relevant factors. It illustrates the subtle nature of some values, priorities, and strategies that surround the solution of clinical problems and the need for learners to be strategic in solving them.

Personal Development

Much has been written about medical students' and young doctors' identity trajectories; they 'become' rather than accrete the attributes of trained practitioners (Monrouxe 2010). The vignette above shows how something so apparently simple as calling for help could construct a learner's identity as 'someone who bottles out too soon', 'goes over colleagues' heads', or 'is unwilling to call for help'. The self-management and emotional reactions entailed in making such a judgment call when your pager is harassing you are self-evident. Teunissen and colleagues have shown how trainee doctors faced with such choices have to balance their willingness to learn against their keenness to cut favourable impressions with senior colleagues (Teunissen et al. 2009).

Teamwork

Medicine cannot be practised without collaboration, and yet it is a competitive profession. Along the teamwork trajectory, junior doctors like Sarah must develop their ability to plan and solve problems jointly, which may be challenging when doctors of different grades of seniority work together, or members of different health professions join together to care for patients. The different priorities and competencies of all professionals involved in problems have to be reconciled and used to patients' benefit.

Role Performance

Readiness to take on a senior position as a fully trained doctor calls for trainees to take on a variety of roles. They progress over five years from being the most junior members of clinical teams to supervising and teaching more junior people. They must both lead and be accountable to others. They must be able to manage crises and handle ethical issues. They must learn to delegate.

Academic Knowledge and Skills

We have highlighted the divide between the type of knowledge tested in exams and the type of knowledge required in practice. A 'half-way house' between them is 'evidence-based medicine', which exhorts doctors to formulate questions arising from patient care in ways that are amenable to scholarly answers. The snag is that the espoused medical knowledge taught and tested in undergraduate and postgraduate education ill prepares doctors to solve clinical problems in scholarly ways, unless a patient's problem is an exotic one. There is also an ongoing debate about the true proportion of clinical problems that are amenable to the type of codified solutions on-line databases and the like can offer. Another disjoint is between the basic sciences taught in medical school and the way clinical problems present, which are so removed from one another that 'transfer' of knowledge is a substantial relearning task. Clinical reasoning is held to be a type of theoretical thinking, but experienced doctors make sophisticated diagnoses and choose treatments in ways that seem to novices more like black magic than logic, and which experienced doctors may put down to 'gut feelings' or 'experience'.

Decision-making and Problem-solving

If one takes into account the human dimension of illness, clinical problems are rarely entirely simple, though doctors-in-training may have to (over) simplify them

to survive the pressures of workload and complexity they deal with every day. The ability to see problems in simple ways that lead to the most effective actions comes with experience, and challenges people's tolerance of uncertainty and ability to see problems in shades of grey rather than black and white. Consider, for example, the abusive patient about whom Sarah is repeatedly being paged. The hospital operates a 'zero tolerance' policy towards abuse of staff, which he is clearly breaching. He could be cautioned, sedated and/or physically restrained by security staff, which would allow Sarah to devote the requisite time to the patient with a sore on their foot. But the abusive behaviour could be due to physical illness that needs treatment. It could also result from the patient being afraid, and the nurses may be afraid too. A gentle and understanding approach to the people concerned could 'defuse' the problem or lead to some other less draconian solution than having a burly security guard sitting at the bedside and making the patient even more afraid.

Judgement

The last of Eraut's eight categories of learning trajectory may seem to have been covered in different ways under previous ones, but the times when doctors make their worst mistakes is when they fail to judge how sick a patient is. There are other judgement calls: one of us, for example, became aware that a doctor working under his supervision was dangerously unskilled. When the nurses and doctors on the ward were asked, individually, if they had any concerns, every one of them was seriously concerned about the doctor's performance, but neither individually nor collectively had they judged the person as unfit to practice, which was clearly the case.

To conclude our treatment of knowledge, it is ironic that medicine primarily values codified knowledge and its leaders are currently trying to reduce such complex attributes as doctors' humanity to competencies, while research in hairdressing (Billett 2006), nursing, accountancy, and engineering (Eraut; Chap. 3 in this volume) has arrived at more authentic descriptions of how learning occurs. We are not arguing that Eraut's typology should be formally adopted in medical education. We do find it informative, however, that it can be so easily populated with medical examples. Medicine, we conclude, has types of knowledge that defy codification. Eraut's concept that learning takes place along trajectories, moreover, sanctions the type of lifelong learning that makes specialist doctors experts rather than just competent people. The next section moves from how doctors become expert clinicians to how they learn to teach. It starts from a historical perspective and then considers some contemporary forces for change. It identifies a mismatch between how doctors are taught to support the on-the-job learning of junior colleagues and how medicine is actually learned on-the-job, which is consonant with misalignment in theories of knowledge discussed above.

Becoming a Medical Teacher

Teaching your future colleagues

Sarah's third year of residency is progressing and she is keeping her portfolio of evidence that demonstrates her competence up to date. Although her current hospital is not a university hospital, medical students rotate here to do clinical placements with the consultant she is working for. He has a management role and copes with his teaching responsibilities by unofficially delegating them to Sarah. She likes the idea of having contact with students, but the mandatory 'teach the teachers' workshop she attended in her last job was very much orientated towards teaching skills like blood-taking and examining students' proficiency on anatomical models in a clinical skills laboratory. One of the students asks if she can sit in with Sarah during this afternoon's outpatient clinic. Sarah is self-conscious about having someone watching her work and cannot imagine how, under the time pressures she faces, she can find time to teach as well as see patients.

The previously mentioned notion that doctors have a *duty* to teach suggests that education is embedded in medicine, which implies that doctors' basic skills-set equips them to be educators. That would have been a reasonable assumption in earlier years when postgraduate medical education was an apprenticeship and junior doctors learned practice skills under the tutelage of a master. That type of education is neatly summarised by the aphorism: 'See one, do one, teach one'. Assessment, feedback, appraisal and portfolios were nowhere to be seen! Now, education processes are much more formal and teaching roles are also more formal. In particular, there is an emphasis on instructing and assessing teaching skills. As young doctors' education has been formalised, teaching roles have been formalised and so has teacher development. Medical professional organisations, which formerly only acted as examining bodies, have constituted themselves as providers of teacher training. By doing so, they have retained their power and influence despite education becoming a practice distinct from medicine.

In order to examine how the role and education of medical teachers is constructed in 'the new order', Table 4.1 presents the syllabus for a course aimed at helping doctors take on workplace education roles, from supervisor of trainee doctors' daily work through to education leader. Rather than choosing one such course (many of which are run in the UK) entirely at random, we chose one provided in the part of England where the seminars on which this book was born took place. We have added subheadings to the table and clustered course content under them, but Table 4.1 is otherwise faithful to the online description of what is doubtless an effective course. It is striking that (summative) assessment is the strongest theme. The workplace-based assessments referred to in the upper section of Table 4.1 entail demonstrating clinical proficiency to a supervisor. Learners are responsible for asking trained doctors to perform such assessments at mutually convenient moments. A learner performs some

Table 4.1 Programme for a postgraduate certificate in workplace-based postgraduate medical education

Completion of this 20-credit module gives a doctor ‘approved clinical supervisor status’—in other words, approval to supervise the daily clinical work of a doctor in training. Topics addressed in it include:

<u>Teaching learners medical practice:</u>	<u>Assessing learners:</u>
Clinical skills teaching	Workplace-based assessment
Teaching in the clinical workplace	Feedback
<u>Co-conducting clinical practice:</u>	Portfolios
Supervision	<u>Education theory:</u>
<u>Education practice:</u>	Understanding adult learning
Reflective practice	Styles of learning
Peer observation of teaching	Styles of teaching
<u>Fostering learning environments:</u>	Philosophy of teaching
Educational climate	

Completion of this 20-credit module gives a doctors’ approved educational supervisor status’—in other words, approval to act as an appraiser with responsibility for a trainee’s learning for a defined period. Topics addressed in it include:

<u>Assessing learners:</u>	<u>Formal education roles/processes:</u>
Assessing learning needs	Mentoring and coaching
Learning agreements and objectives	Quality management
Assessment and appraisal principles	Introduction to careers support
Annual review of competence progression (ARCP) reports	Supporting trainees in difficulty

Completion of this 20-credit module, together with the preceding two, qualifies doctors for award of a Postgraduate Certificate in Workplace Based Postgraduate Medical Education. Topics addressed in it include:

<u>Assessing learners:</u>	<u>Education practice:</u>
Appraisal skills	Approaches to medical education, e.g. PBL, e-learning
ARCP cycle and structures	Educational leadership—principles and approaches
<u>Formal education roles/processes:</u>	Presentation skills
Managing the educational experience	Methods of medical education, e.g. presentations, group work
Advanced career management	
Recruitment and selection	
Curriculum planning and course design	

Adapted from: www.nwpgmd.nhs.uk/sites/default/files/PGCEOverviewJuly2012.pdf. The headings of the three sections of the table were adapted by us from the original course description, and the underlined subheadings and grouping of course content were done by us. The individual items of learning in the course are copied verbatim from the original site

authentic task for about ten minutes while a doctor observes and then completes a computer-based proforma. The doctor gives the learner verbal feedback on strengths demonstrated and areas for improvement. Fitness to progress through training is determined by cumulative performance over multiple such assessments so each one is ‘low stakes’. All specialties include ‘high stakes’ assessments as well, which are provided by medical professional accrediting organisations. They typically assess practical proficiency in simulated settings and knowledge under standardised test conditions.

The middle section of Table 4.1 includes formal roles taken on by clinicians as assessors, appraisers, coaches, mentors, career advisers and supporters at times of difficulty. Trained doctors are, to some degree, both poachers and gamekeepers in their relationships with trainees. Poachers, because supervisor and supervisee practice together and are interdependent in running what are usually very hard-pressed clinical services. They may develop quite close and friendly relationships, in which a supervisor's instinct is to support their supervisee; or, at worst, turn a blind eye to their shortcomings or deny that such shortcomings exist. If subjectivity can bedevil supervision in a positive way, it can bedevil supervision in a negative way too; typically, when relationships between supervisor and supervisee are soured for some reason. But even within friendly relationships, one key professional duty of doctors is to give honest opinions about the proficiency of other doctors, particularly when the wellbeing of patients is at stake. So, supervisors must be gamekeepers as well as poachers.

It is striking to compare the rather formal and regulatory discourse of medical education presented in Table 4.1, with the findings of a detailed ethnographic survey of how trainee doctors actually learn. Shah and colleagues (Shah et al. 2012) found that trainee doctors learned primarily through informal learning that took place in the heat of, and was intimately linked to, clinical practice. Their learning began and ended with the care of individual patients, alone or supported by experienced practitioners. The formal educational system represented by Table 4.1, and captured by terms like assessment, appraisal, mentoring, portfolio, teaching and so on, was conspicuous by its absence in both teachers' and learners' narrative accounts. Just two items in Table 4.1—co-conducting practice and fostering learning environments—were strongly represented in the study of Shah et al. (2012). Trainee doctors learned best in warm, well-organised learning environments, where the workload was neither too great nor too small, and where there was time to step back from the rigours of patient care, ponder it, and discuss it with peers and experienced seniors. Learning was a social process. Their medium of learning was the informal communicative practices of workplaces, which allowed more experienced doctors to share cognitive processes and tacit knowledge with less experienced ones (Shah et al. 2012). Medical students, like the one who wants to sit in with Sarah, need more in the way of formal instruction than Sarah, whose learning is decidedly on-the-job, but it is only through on-the-job, experience that students can ever find out what doctors do, and what they will have to do when qualified.

Moving from the specific and regional instance of medical teacher education presented in Table 4.1 to wider generalities, 'faculty development' (training doctors and other staff of medical schools to be teachers) is the subject of much contemporary medical education research. A systematic literature review by Steinert and colleagues (Steinert et al. 2006) summarised research in the field. Faculty development, the review concluded, had positive effects, particularly when it used experiential learning, provision of feedback, effective peer and colleague relationships, well-designed interventions following principles of teaching and learning, and the use of a diversity of educational methods within single interventions. The review was bedevilled by having 'teaching' as the main dependent variable. The term 'teaching' is used in

medicine as though it has some universally shared meaning, but the review of Steiner et al. (2006) showed it could mean anything from ‘chalk and talk’ pedagogy, to instructing clinical skills, to mentoring young doctors’ professional development. It would be puzzling if investing resources in teaching teachers had no positive effects at all, so the results of the review are unsurprising, if encouraging. But it leaves us unsure how to help doctors most efficiently and effectively reconcile their practice of medicine with the education of less experienced colleagues, which is what Sarah has to do. We appeal to readers to consider parallels in their own practices; how much do we know about how experienced teachers in any field share their expertise with trainee teachers in present-day education?

To summarise this section, we have described how a centuries-old, informal process of learning to teach has rather quickly become formalised in line with a new discourse of faculty development. Formal courses, which have sprung up to support clinical teacher education, seem rather closely linked to assessment processes and implicitly linked to professional regulation. Meanwhile, research shows that most professional learning takes place informally, through social interactions between experienced and novice practitioners, and is distinctly unlinked to regulation. So, the official curriculum of teacher education in medicine is removed from the very educational practice it is supposed to support.

Summary and Conclusions

This chapter has reviewed a practice that puts the needs of patients ahead of profit or practitioners’ personal ambitions, even if at some risk to their wellbeing. It has shown how theories of codified knowledge, which are rather far removed from everyday workplace realities, dominate the official discourse of education. Those theories serve two purposes. One is to make professional expertise susceptible to assessment. The other, which follows from being able to assess professional expertise, is to subjugate junior practitioners to senior ones. Reducing learning to measurable competencies is very much in vogue, despite earlier rejection of this approach to education. The subject matter of learning, as applied in practice, is far removed from competencies, particularly when it comes to subtle, humane ones like interpersonal skills and professional values. Eraut’s taxonomy of trajectories along which professionals grow, that was developed in accountancy, nursing and engineering, could be applied also to medicine. This chapter arrived at those conclusions by a case-study of medicine as a professional educational practice, but we suggest there may be useful parallels with teaching. Workplace education allows practitioners to learn their profession in ways that would not be possible if learning was mainly based in university study, but a regulatory discourse of competency-based education, applied to workplace learning, threatens to trivialise the very professional values it seeks to support.

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