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Part II: Educational approaches

The second part of this book ([Chapters 6 and 7](#)) explores generalist approaches to clinical education. The clinical knowledge of a generalist is, by its very nature, dynamic and responsive. In this part, therefore, we consider how the principles of generalism articulated in [Chapter 1](#) can be taught, learned and assessed, and how these principles inform approaches to education.

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Education for clinical generalism

Sophie Park, Kay Leedham-Green and Ben Jackson

Introduction

In [Chapter 1](#), we looked at generalism as a philosophy of practice. We began to explore how generalist knowledge is not fixed, but alive and dynamic: responsive and adaptive to current identified needs. We described in [Chapter 2](#) how generalists work successfully within this unbounded knowledge space to address all types of problems at all stages of life, working collaboratively and drawing on external expertise as needed. In [Chapters 4](#) and [5](#) we explored how the implementation of generalist knowledge within clinical practice is often not a linear process, but one with multiple possible pathways, co-constructed between the patient and their healthcare professional according to individual needs and preferences.

There are of course parallels between approaches in generalist practice and the approaches that support learning about generalism, as these are underpinned by the same philosophy. Generalist principles to education apply at all educational stages of a clinician's career arc as the emphasis gradually shifts from full-time learning, to service provision, to leadership and teaching.

We argue that generalist learning is optimally facilitated through holistic clinical workplace-based experiences and patient-based learning. Clinical debrief and 'critical reflexivity' are employed to explore unmet patient needs and co-construct learners' educational needs ([1](#)). Learning *through* practice is supplemented by responsive study and adaptive strategies for addressing personal learning goals so that the relevant knowledge necessary to optimise clinical outcomes is *connected* with dynamic patient and population needs. Learners are engaged as partners in, rather than as recipients of, education.

We begin by thinking about the nature of generalist knowledge (what is being learned) and how educational systems enable or inhibit how that knowledge is shared, communicated or exchanged (the process of learning). Although we touch on assessment, this is covered in more detail in [Chapter 7](#). Whether you are a teacher, learner or clinician (or perhaps all three), we hope this chapter will enable you to consider opportunities for sharing and building generalist knowledge and suggest strategies to mitigate and overcome any challenges.

Learning is sometimes thought to be a unidirectional and didactic transfer of pre-existing knowledge from teacher to learner ('telling'). Similarly, knowledge is sometimes presented as a 'universal truth', to be learned. These perspectives create discrete power dynamics between 'the knower' and 'the receiver' of knowledge. This can disempower the learner as a passive observer or recipient, rather than as an active contributor to the production of knowledge. Similarly, we tend to think about apprenticeship learning as a linear progression, with novices at one end and experts at the other. These 'pre-set', hierarchical perspectives on learning often suggest that there is one right way to acquire knowledge and a pre-defined, ideal outcome at the end of the learning process.

We invite you to think differently: to imagine knowledge and learning as dynamic and flexible. First, knowledge is often 'situated'; either adapted, or unique to a particular social or physical setting. Second, knowledge is 'interactional'; co-produced locally through exchanges between people. These perspectives open up a whole set of possibilities for thinking about what knowledge is; where it is located; how it is produced; and how it is shared and developed. It also moves our view of learners from being positioned within pre-set levels towards a more fluid appreciation of expertise dependent on the situation and individual and system requirements.

Within this dynamic view of learning, knowledge becomes 'distributed' between those involved in its co-production. Learning becomes participatory and dependent upon the learner, their teacher, the patient and the environment in which they are interacting (2,3).

Knowledge content: what is to be learned?

Some forms of knowledge are explicit and easy to categorise. As discussed in [Chapter 4](#), these are sometimes referred to as 'codified' knowledge (4). An example of codified knowledge might be which childhood vaccinations are recommended for which ages? This knowledge is clearly

defined by current guidelines and relatively easy to describe and assess. In clinical practice, however, knowledge is often broader, more complex and conditional upon the circumstances in which it is used. It therefore needs to be adapted to meet those particular circumstances. For example, negotiating childhood vaccinations with hesitant parents. Here, required knowledge might include knowing which health visitor is best to ask for advice (situated), what approaches work best when engaging in conversation about previous experiences of side effects (experiential and narrative), approaches to negotiation and inclusion (interactional), and how health beliefs might be understood or challenged (theoretical). Generalist solutions to problems are therefore seldom fully codified because every person and situation is different, and there are likely to be competing theoretical understandings. Generalist expertise involves implementing codified (e.g. biomedical) knowledge *alongside* other expertise.

Roger Kneebone, in his essay on crossing knowledge paradigms (5), talks about some of the difficulties learners (and indeed educators) may encounter when moving from a fixed idea of knowledge to a more unboundaried concept of what needs to be learned. This disorientation happens when learners and educators begin to recognise the 'complex amalgam of factual knowledge, personal experience, anecdote and empathy, played out against a background of professionalism and underpinned by a sense of care and compassion' that is involved in clinical practice. It also involves recognising that many so-called testable 'facts' and indeed 'competencies' are not fixed but socially constructed: for example, competing clinical guidelines based on different social or economic values (6), or competency-based assessments that do not reflect the complexities of practice (7).

Generalist knowledge and ways of knowing and practising are expansive. There are multiple available forms of knowledge (for example, biomedical, experiential, relational, experimental, procedural, social, behavioural, political, narrative) for the clinician to recognise or use. The process of implementing knowledge is interpretative and adaptive, informed by theories, values and frameworks, and there is therefore not 'one truth'. A patient rarely comes with a predefined condition and leaves with a quick-fix solution to that problem. Rather, their symptoms and concerns are interpreted in relation to causal factors, their environment and concurrent concerns and conditions, as well as future potential concerns. Attending to the psychosocial does not mean ignoring biomedical aspects of the presentation, nor does attending to the biomedical mean rejecting the psychosocial. Rather, the generalist considers

additional and complementary approaches and interprets each in the light of the other.

Once we acknowledge that knowledge comes in multiple shapes and sizes, we can embrace the idea that valuable knowledge will be located across different settings and individuals. For example, patients or carers might become recognised as educators, able to share their expertise about living with a condition or their experience of care. A learning conversation moves from ‘delivery of information’ to an exchange which recognises the pre-existing knowledge of the learner, as well as the fallibility and ongoing learning needs of the teacher. Knowledge becomes ever-developing, rather than an end point. The process of learning moves from acquisition of ‘the right answer’ to inviting a dialogue or exchange of mutual learning that acknowledges different perspectives. This shifts the desired or expected outcome of a clinical learning event from memorising guidelines towards achieving an appropriate solution for unique conditions, priorities and circumstances.

The work of generalists involves integrating biomedical knowledge with other complex ways of knowing. These include negotiation of:

- What might work for this person in this context (for example, particular circumstance or situation, consideration of gaps)?
- What has worked for similar people in similar contexts (for example, previous experience of self or other)?
- What frameworks might inform our approach to their problem (for example, how we value or position one thing as more important over another)?

After exploring challenges to generalist learning, we discuss potential opportunities and strategies.

Challenges to generalist learning

The elevation of biomedical knowledge

Medicine has a long-established and persistent division between ‘pre-clinical’ (scientific) and ‘clinical’ (practical) knowledge. This shapes dominant and persisting approaches to medical education, including the ways institutions locate certain knowledge in particular settings and people (for example, university or clinical placement). This division is attributed to Flexner (8), who in the early 1900s proposed a model for medical training, comprising two years ‘pre-clinical’ training

in biomedical sciences such as anatomy and physiology, followed by at least two years of clinical experiences. This divide of university-based and clinic-based knowledge has permeated medical curricula internationally for over a century. This maintains that learners must become sufficiently familiar with biomedical knowledge, before they can learn how to apply this in practice with patients. This perspective suggests that relevant knowledge is learned separately from patients, and then applied (or done) to them. We argue that this is a counterproductive source of polarisation and separation that perpetuates the Cartesian split between mind and body. We propose a more collaborative, integrative approach between places of knowledge production, places of learning and places of clinical practice.

Compartmentalised learning

Within clinical education, the 'pre-clinical years' tend to be compartmentalised around body (dys)functions (for example, physiology, pharmacology, pathology) or body systems (for example, cardiology, neurology). Similarly, clinical experiences tend to rotate through a series of discrete specialty placements, with sequential assessment about each discipline at the end of each placement or year. Almost exclusively, these rotations have tended to focus on hospital-based experiences (and their expertise around diseases or body parts) rather than community or primary care (and their expertise in universal and comprehensive patient care). Annemarie Mol argues that, from an early stage, learners are taught to see patients through the lens of compartmentalised disciplines, organs or diseases (9). Other knowledge becomes less visible to the learner: for example, learning about a patient's journey across health and illness, the interactions between diseases they experience, or their movement between clinical services. Isabel Menzies Lyth describes the dissonance this creates for staff in caring for an individual as a holistic whole. She argues that compartmentalisation of patients and practices into components or tasks can be construed as a mitigation against the potential anxiety arising from, or emotional work related to, personal and subjective connections between practitioner and patient (10).

The relegation of experiential knowledge of illness

This compartmentalisation within learning and practice raises questions. If learners become familiar with a set of predefined knowledge before, rather than alongside, their interactions with patients, this can shape

their long-term use and preference for certain forms of knowledge over others. Some associate this separation with paternalistic, protocolised approaches to clinical practice, policy and research with the delegitimisation of more person-centred approaches (11). For example, teaching learners to focus exclusively on anatomy, physiology, pathology and pharmacology at the beginning of their studies can make it harder for them to notice, acknowledge and respond to other forms of knowledge, which might be equally, if not more, important to the patient. If the biomedical lens is only part of the potentially relevant knowledge that informs clinical practice, then it is perhaps counterproductive to forefront this incomplete knowledge in isolation so early in a clinical learner's education.

Combine this focus on disease-based knowledge with assessments that encourage early learners to preference fixed notions of knowledge – for example, through single-best-answer questions – and we create the conditions for learners to develop a very limited, deductive engagement with patients. The developing clinician focuses on knowledge they have been told is most legitimate (pharmacology, pathology, protocols and so on) and uses this to frame their attention during their patient interactions. Forms of knowledge that do not fit their assessment paradigm, such as the humanities, communication and social sciences, become deprioritised. Elevating biomedical ways of knowing can produce a power discrepancy between clinicians and their patients, dismissing other knowledge – for example, the knowledge brought by the patient, the knowledge that is co-constructed during the encounter, and the theories that might inform the interaction – as less important.

Insulating learners from the hidden work of generalists

There is an educational tension between the delivery of discrete codified, accessible 'pots' of knowledge and the need to integrate, connect, transform and implement knowledge in practice. An assumption within the Flexnerian model is that learners can develop a series of knowledge 'pots', and then work out how to connect and apply them: which pot to use when, and how the pots might relate to one another. This produces challenges when a patient brings undifferentiated symptoms such as 'tired all the time' or 'out of sorts', or when people have multiple complex conditions or enduring symptoms or disabilities (see [Chapter 18](#) on multimorbidity). Sometimes clinical educators attempt to protect learners from these complex and potentially overwhelming 'presentations' by preselecting or limiting the focus of a learner–patient interaction – for example, by triaging less complex patients for learners, or focusing on a

specific curriculum topic, or detaching the learner from the clinical management process.

These attempts to predefine the learning encounter position the clinical teacher as ‘the knower’ in relation to the learner, and the patients’ symptoms become a puzzle to be correctly solved through some advance preparation. While these more concrete and discrete ways of teaching can provide a sense of incremental growth and control, they can also produce a counterproductive illusion of simplicity, or devalue the situated nature of illness and disease, effectively hiding the complexity of generalism: ‘I have already seen a case of COPD, so don’t need to see another’, or ‘that patient isn’t relevant to my learning, as they don’t have a formal disease diagnosis’. At worst it can promote a situation where people presenting with real suffering that is difficult to codify are dismissed as irrelevant or peripheral to clinical education priorities, perpetuating the problem for future patient interactions. Similarly, separating diagnosis from management can insulate learners from complex challenges around the suitability and clinical need for treatment and referral beyond simple guidelines and referral pathways.

Before proposing generalist solutions to some of these challenges, we share an example of a generalist community of learning based in primary care.

Example 6.1: The Village Practice (an educational community of practice in primary care)

The Village Practice has four general practitioners, two practice nurses, a link worker, an apprentice healthcare assistant, a practice manager and several administrators. The local university sends four undergraduate medical students who come every Tuesday for a year, and two graduate doctors in training who rotate every six months. The university provides teacher development and an annual educational conference.

The four undergraduate medical students have broad learning outcomes specified by their university, as well as project work and ‘sign-offs’, but the university is flexible as to how these outcomes are achieved. Each pair of medical students sees two or three patients from that day’s list who have agreed to longer ‘teaching appointments’ at booking. The students spend up to 40 minutes with each patient before inviting their GP supervisor to debrief

with the patient and check any clinical decisions. At the end of the session, they reflect together and agree on personal learning goals. For the rest of the day, they work in pairs on a 'community action project', or see one of their 'longitudinal patients'. These patients are people with multimorbidity who have agreed to share their experiences with students. The students visit them at home several times over the year, helping them identify an achievable change that might make a difference, and supporting them in making it happen. Students debrief with their supervisor after each visit and sometimes act as the patient's advocate with the social prescribing link worker. Their community action projects are adapted from a list of university suggestions: one pair is evaluating a local walking group; the other is doing an inhaler recycling project. Their project posters will be assessed at the university's annual teacher conference and presented at the practice learning group.

The two graduate doctors have seven clinics and three education sessions each week. Each clinic is three hours long and they see around 12 patients followed by a GP-led debrief where they collaboratively review decisions, discuss any unmet patient needs, and identify knowledge gaps and learning goals. Evidence of engagement and progress towards learning goals is stored in their e-portfolio. One of their education sessions is at the local university with other trainees; the other two are self-directed. They are currently practising for an upcoming 'simulated consultation assessment' (see [Chapter 7](#)) so they analyse their most interesting or challenging consultations together.

The apprentice healthcare assistant is being trained by the practice nurse in phlebotomy, vaccination, ECGs, spirometry, anticoagulation and routine monitoring. They are currently learning how to support the chronic condition reviews that happen before personalised care-planning appointments (see [Chapter 18](#)). Once their 18-month apprenticeship period is over, they intend to stay on at the practice.

The practice manager organises a fortnightly practice learning group over an extended lunch break. Everyone attends, including their patient participation group. Anyone can suggest a topic for learning or improvement and upvote the topics that interest them. Recent topics have included: continuity of care, trauma-informed care, the appointment booking system, shared decision-making,

responding to feedback, social prescribing, advances in smoking cessation, and responding to mental health crises. After each meeting, everyone commits to an action which is reviewed at subsequent meetings. They finish by agreeing on the next topic and an educational strategy: perhaps an article or video for discussion, a learner-led workshop, or inviting patients and carers to share their experiences and co-design improvements.

Reflective questions

We invite you to reflect on how the principles of generalism are enacted in this example. What diverse knowledge forms are included? How is new knowledge co-created in ways that are responsive and agile to clinical needs? How are collaborative practices and distributed expertise reflected? How are research, practice, patients and learning connected? From an educational perspective, what structures support effortful learning, meaningful feedback and personalised approaches to learning? How are teachers and learners developing together?

Opportunities and strategies for generalist learning

We now discuss some of the potential strategies for enabling learning that support authentic generalist approaches to clinical practice. Generalism is a situated practice, informed by and connected with scholarly resources and evidence. This includes knowledge about people, places and local systems as well as the biomedical, social and behavioural sciences. It is key, therefore, that learning about generalism includes a close and integrated connection between clinical practice (service delivery) and learning.

Assessments that support generalist learning

John Biggs reminds us that educators often start by defining what is to be learned, then design associated teaching strategies, and last of all, create assessments to check what has been learned (12). Learners, on the other hand, tend to focus on what is to be assessed. They see their assessments as the curriculum, and focus their learning activities accordingly. The trick, then, is to create assessments that align with the knowledge and

competencies that patients, experts and other stakeholders need learners to acquire and use (3): *assessment for learning*, rather than simply *of learning*.

Nowhere is the divide between expansive generalist knowledge and bounded biomedical teaching made more obvious than within assessment practices. When assessing clinical learning, written papers for high-stakes examinations are increasingly machine-marked formats such as multiple-choice, or single-best-answer (13), implying an objective single-best approach to patient problems. Practical examinations test isolated procedures, such as examining an abdomen, with objective structured mark sheets, implying a right or wrong (rather than responsive) way of practising. High-stakes examinations, such as the UK Medical Licensing Assessment (MLA), specify the types of patient problems and procedures that might appear in the assessment (14), implying a finite amount of knowledge that means one is 'prepared for practice'. What does this assessment paradigm say about how we value critical thinking about different approaches to clinical practice? Or adaptive approaches to meet patient needs or context? Or working safely when the answer is uncertain? Or team-based practice? Or relationship-based care? These assessment challenges are further explored in [Chapter 7](#).

Positivist approaches to assessment can convey dissonant messages to learners and teachers about the value of 'top-down' knowledge standards (for example, being able to recall management guidelines) versus 'bottom-up' experiential learning through patient encounters (for example, being able to implement guidelines with a patient where the diagnosis is currently uncertain, or where the patient has other complex needs). There is a risk that assessments drive learners to focus on rote memorisation and repetitive practising of decontextualised skills where, for example, the abdominal examination becomes a performance rather than a genuine diagnostic tool. Brian Hodges reminds us to be critically aware of the dominant discourses that frame our approaches to assessment. Poorly aligned assessments might create the illusion of competence but may risk inadvertently driving incompetence (7). The purpose of assessment is not just to assess simple description or reproduction of learning. Rather, assessment can drive meaningful learning through stimulating knowledge transformation or consolidation.

Immersive workplace-based learning

Generalism invites an authentic approach to learning through clinical interactions so that learning is responsive to patient needs. Paul Atkinson

describes the distinction between learner–patient encounters which are filtered (which he calls ‘cold’) and encounters which are contemporaneous with a patient’s clinical care and healthcare journey (which he calls ‘hot’) (15) – see Figure 6.1. Cold learning is predetermined, producing an impression of certainty or ‘the right answer’ to be uncovered. Hot learning, for us, is workplace-based learning at its best. A learner meets with a patient early in their clinical care, rather than ‘clerking’ them after they have been ‘processed’. This maximises opportunities for active engagement in the clinical process and learner contributions to care (supported according to their capabilities). A learner can explore diagnostic possibilities and uncertainties, while considering a wider range of diverse patient needs.

Facilitated debrief and reflection about the patient encounter can stimulate further self-directed learning. The learner can become familiar with a broad range of reasons for attendance, not all of which fit the ‘diagnose, treat, cure’ paradigm of textbooks. Such interactions with patients may address disease-oriented needs, but are also likely to include consideration of social and psychological complexities, symptoms that never reach a point of diagnosis, living with chronic conditions, and even complaints or requests for second opinions. This affords opportunities for learners to implement their current knowledge (how to elicit, filter, prioritise, select and focus), to construct new knowledge through social interactions, and to purposefully expand their knowledge

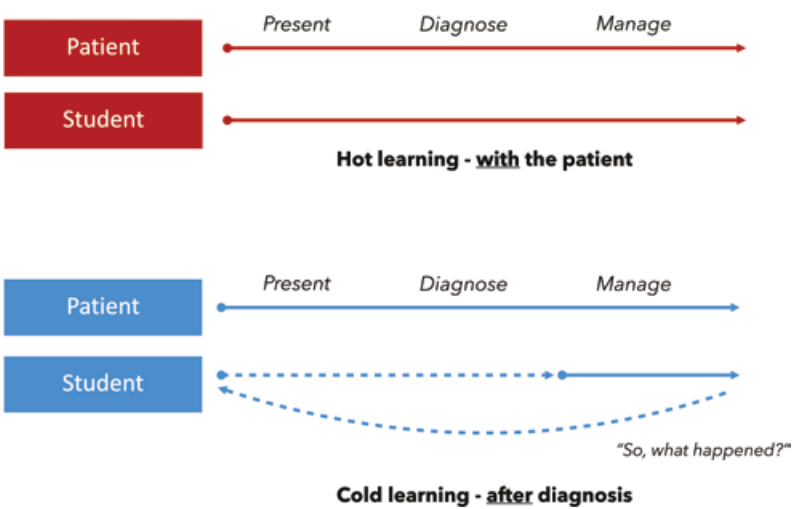


Figure 6.1 Hot and cold clinical learning. © Sophie Park, based on description in Atkinson, 1975

around identified gaps. The disease label or absence/presence of disease no longer becomes the sole learning focus or end point, as learning has arisen through the process of patient engagement. Learners also learn to manage uncertainty from the outset, and how to navigate the ethical and social dilemmas encountered within clinical care. Learning becomes shaped towards both topic-based knowledge *and* the capabilities to implement and adapt that knowledge content to situated patient care.

Learning in partnership with patients

Generalist learning happens in participation with patients, who need to be recognised as a legitimate and expected part of learning conversations (see also [Chapter 2](#)). This means sharing the learning process with patients, including whether the learner wants feedback on a specific aspect of the encounter so that they can contribute fully to the learner's development. It also means checking in with the patient during the learning encounter or inviting them to debrief or provide feedback afterwards, so that patient experiences inform the future organisation and delivery of clinical learning.

Patients may need support and guidance on how they can contribute to a learning encounter (16–18). This can be done through some basic groundwork, which can be negotiated by the supervisor on behalf of the learner, or by the learner during the encounter. Service and teaching are often integrated within clinical organisations. It is, however, important wherever possible to ensure that people contributing to service-based learning are comfortable. This includes consent (ideally before entering a clinical space) and iterative checkpoints as the interaction evolves (17). This helps to orientate and set expectations. This includes sharing:

- Information about the learner and their course or placement (for example, 'I am Rehan, training to be an Advanced Clinical Practitioner; I have a background as a paramedic').
- What the learner is currently working on, and how this interaction fits in (for example, 'I am working on exploring people's concerns. My supervisor will join us after our conversation, and help plan next steps together ...').
- Explicit confidentiality assurance and repeated iterative consent at different stages of the interaction for discussion, examination, deliberation with a colleague and so on (for example, 'First, can we have a conversation? Now, is it OK if I examine you?').

- Nature of the planned patient–student interaction and feedback opportunities (for example, ‘I will try to summarise our discussion to my supervisor – would you mind letting me know how my summary sounds?’).
- What the student knows and would like to learn, and any additional learning established through the encounter (for example, ‘I haven’t met many people with x yet; could you tell me about how you were first diagnosed and what you’ve found helpful since then?’).
- How the patient–learner interaction will contribute to the patient’s care (for example, ‘Let’s try to come up with a plan together, but this will need to be checked by my supervisor before you go’).
- Any ground rules such as mutual respect and time out if either feels discomfort.

Learning *through practice* provides opportunities for learner–patient interactions that actually contribute to the care process rather than simply being a ‘dummy’ parallel process. Establishing safe ways in which this might happen can give the learner a sense of responsibility and provide recognition that the knowledge they acquire and implement is ‘live’. Feedback from a patient that their story and concerns have been accurately summarised, for example, can provide encouragement for even the earliest learners that they are developing useful skills for generalist care.

Supporting learners to work safely with uncertainty

An important part of establishing a sense of safety before patient interactions is for both the learner and teacher to discuss how uncertainty should be managed: not *if* it occurs, but when and how. Should uncertainty be explored with the patient present as an observer or partner in the conversation, or should this be discussed in the next room? Is it safe to wait until after the patient has left? The teacher may also want to clarify whether, when and how the learner is expected to try to address their own uncertainties. Should this be done with the patient? Should this be done immediately, or noted for later discussion? How might the learner develop independent strategies for addressing their own knowledge gaps (for example, by consulting online guidelines, or discussing with peers)? Or should they ask their teacher first? How and when will the teacher respond to the learner’s uncertainties, and will they share their own uncertainties and model their own strategies for dealing with them?

Supporting learners to engage in deliberate and scholarly work

Although immersion in the clinical workplace is important, it is not enough *in itself*. We need to develop expert practitioners who engage with generalism's research-informed practices and complex evidence base. Anders Ericsson talked about the concept of 'deliberate practice' in the development of expertise (19,20). He observed that the most effective learners were constantly pushing the boundaries of what they could do, guided by experts, studying the practices of others, identifying their own weaknesses and purposefully practising around them. Social engagement ('being immersed') is not enough. Learners also need to be cognitively engaged: identifying gaps in their knowledge through expert guidance, reflection and feedback, and effortfully and purposefully addressing those gaps.

Scholarly engagement with the diverse knowledge that underpins generalism may be straightforward if innate curiosity motivates learners to explore. This intellectual engagement is, however, hard work. This therefore needs encouragement, guidance and structural support. It is important to build expectations and opportunities for learning into the clinical learning environment; and to align activities, assignments and assessments so that they drive engagement with generalist knowledge forms. Learners can then begin to access and experience the connection between clinical practice and learning approaches, and their scholarly or intellectual underpinnings. Helping learners to develop their own approaches to developing and sustaining scholarly informed practice is key.

Engaging learners in a connected curriculum for generalism

Dilly Fung, in her book *A Connected Curriculum for Higher Education*, argues that attempts to standardise clinical education have led to it becoming disconnected from the evolving needs of patients and society, as well as from research and innovation (21). Fung argues for a more dynamic curriculum that is built on two-way connections and the construction of new knowledge between all the stakeholders: learners, clinical teachers, academic faculty, leadership, administration, patients and communities. In this form of connected curriculum, learners require regular points of dialogue to help frame, bound or expand understanding about a particular clinical experience from other sources.

Examples of connections from the primary care-based Example 6.1 include responsive learning goals identified through debrief after clinical encounters; the postgraduate trainees bringing research-informed ways

of practising from the university to the team; the students' community-based projects being shared with both the team and the university via the teaching conference; and the practice learning group which has a dynamic rather than fixed curriculum that is multiprofessional, involves patients, and brings historically separated areas of knowledge together. In this way, service-based learning activities and the needs of patients and learners *inform and are informed by* curricular goals or outcomes, which also *inform and are informed by*, for example, research and policy (21). These two-way connections allow learners and teachers to attend not only to what is known and experienced, but also to what is not (22): enabling them to articulate and address the unmet needs of patients and society and their own unmet educational goals, as well as ensuring learning is research-informed.

There is a multitude of ways to create and use curricula in more dynamic and connected ways. The key to supporting generalist learning is to ensure that the process supports 'hot' or 'bottom-up' learning: from and through practice. The temptation to predefine topics and areas for learning is huge, shifting autonomy and control towards the governing institution rather than the learner. Trust and agility are required, but so are structures that enable inclusive points of connection, such as the practice learning group in [Example 6.1](#). Curriculum space and learning effort then become more agile and responsive to learner and patient needs and to new research.

Creating a supportive learning environment

Participating in new communities of practice is not easy for learners and must be dynamically negotiated (23). Most professional groups or communities will, over time, develop unique words, rituals and meanings which they attribute to particular ideas, processes or objects (2). These might be simple things like whether to 'wear' a stethoscope, whether to use first names, or who sits where around a meeting table. Communities of practice that use complex knowledge also tend to develop a particular language as theories and ideas are given shorthand labels: for example, 'concordance' or 'functional'. Language, artefacts, rituals and attributed meanings, however, can feel impenetrable to a novice and produce a barrier between a learner's position as 'outsider' and their desired position as 'insider' or 'knower'. If a learner is used to being in a hospital clinical setting, they might feel very unsettled if their position shifts from insider and 'knower' to peripheral member and 'partial knower' within an unfamiliar primary care context, or vice versa.

The positioning of a learner within a new community of practice needs to be carefully managed. Learners need to feel welcomed and invited, and trust their seniors and near-peers not to humiliate or ostracise them for ‘not knowing’, but rather celebrate their curiosity. This ‘insider–outsider’ tension can present at any transition between clinical learning environments (24), and even after a period of absence when terminology and associated meanings might have shifted. If novices feel welcomed and invited to share their curiosity, this has broader advantages for that community. Their ‘fresh eyes’ can invoke critical curiosity about what words mean, and how and why things are done in certain ways. This can help clinical teams to recognise the value (and occasionally the absurdity) of established ways of working (25).

It is also important from a patient-safety perspective for learners to feel safe to discuss their ideas, questions and concerns, and to say when they are unsure and to focus with curiosity and openness on what they do not know, rather than retreat to what they do. This requires an environment that fosters a growth mindset (26) and a sense of psychological safety (27). A learner-led multiprofessional exploration of psychological safety in generalist learning environments (28) found a sense of safety was inhibited by hierarchical and boundaried working and fear of ridicule for ‘not knowing’. Conversely, safety was engendered through a variety of modifiable mechanisms: educational supervisors and team leaders who created a safe and inclusive learning culture; strong interpersonal relationships supported through extended or longitudinal placements; peer-to-peer support through small-group learning (hence in our example undergraduate learners worked in pairs); and opportunities for open and inclusive dialogue across hierarchies and silos, often supported by a ‘boundary spanner’ who creates spaces for conversations that might not otherwise happen (in our example, the ‘boundary spanner’ was the practice manager who convened the practice learning group).

Learners require a safe place to think (often aloud), to listen and challenge, to explore and try things out, and a trusting dialogue with those providing support and guidance. A sense of safety and trust supports the learner to stretch themselves further towards the limits of their capability and maximises the extent to which a teacher or organisation will position a learner as an active participant in the clinical environment.

Personalising educational approaches

Dewey and, more recently, Freire have challenged the idea dominating many educational models where learning has become a standardised and

industrial process to produce 'outputs' on exiting a course with reproducible and replicable traits and behaviours (29,30). In contrast, they propose a model of education which enables each learner to be treated as an individual. Learning therefore becomes more focused on professional development needs, with each individual having their own trajectory, dependent on their evolving role, patient and societal needs, and contextual constraints. Forefronting the aim of learning as personal growth and engagement in clinical practice (in addition to reaching a standardised or pre-set competency) positions learners in the driving seat and allows them greater agency over their own learning journey.

Conceptualising a more dynamic approach to clinical learning requires a dynamic curricular map. E-portfolios are an important and potentially dynamic tool in highly distributed learning environments such as the clinical workplace, where learners might be attached to different clinical teachers across many different sites, or rotate between sites. A dynamic e-portfolio can enable educational institutions to share their desired 'top-down' outcomes with teachers and learners, but with flexible personalisation as to how and when those outcomes are achieved. Administrators and accrediting bodies can connect with learners and their supervisors via the e-portfolio so that all are clear on progress towards accreditation standards and any additional evidence needed. A dynamic portfolio of learning can also help learners and their educational supervisors to keep track of 'bottom-up' personal learning goals, generated in response to clinical encounters, which can be handed forward to new supervisors or mentors, providing a purposeful focus for learning effort. Learners and supervisors can see what has been learned, so, rather than duplicate prior learning, effort can be focused on areas for improvement. As learners progress from novice to practising professional, personalised education becomes increasingly important as learners bring more and more prior professional knowledge and develop increasingly unique professional journeys. Learners can also showcase additional projects or learning that they have undertaken in areas of personal or professional interest.

If clinical learning changes from a top-down curriculum to a more connected 'real-world' curriculum that reflects both regulatory priorities *and* clinical care 'as practised', students are likely to find themselves moving into the spaces where care actually happens. Training might follow actual patient pathways, thereby embracing a wider range of health and social care knowledge and producing graduates who are genuinely prepared for practice. Of course, clinical learners need to function within a certain agreed range of norms and regulatory standards. Personalised approaches, however, acknowledge that norms and standards are constantly changing

(sometimes slowly, sometimes – as in the case of the COVID-19 pandemic – rapidly). Equipping clinicians with the ability not just to follow pre-set rules and rehearse pre-set routines, but to question how and when they might need to be applied or adjusted, enables clinicians to adapt their knowledge to the ever-changing demands of patient care. It also enables learners to develop a professional identity that feels personally congruent rather than imposed, supporting their future wellbeing (31).

Promoting clinical reasoning and critical reflexivity through debrief

Feedback can take many forms. It might be corrective – for example, if a learner has prescribed an incorrect dose. It can be directive – for example, if a learner has failed to follow guidelines or consider important possibilities. Feedback can also help a learner judge whether something was good or bad from a particular perspective – for example, whether the patient felt listened to. Generalist learning, however, requires feedback to both embrace and move beyond corrective, directive or judgemental forms, towards connecting what was done with outcomes, so that it not only supports safe effective consultation outcomes, but also stimulates collaborative meaning-making, critical reflexivity and transferable learning about how those outcomes were met. If debrief is purely corrective – attending only to ‘right or wrong’ outcomes, or even the ‘teacher’ effectively doing the learner’s consultations again for them – then limited transferable learning happens. If, however, it attends to processes (for example, ‘what were your thoughts at this stage?’, ‘at what point did you realise you were uncertain?’, ‘how else could you have managed that uncertainty?’) then feed-forward learning is more likely to happen. As Suzanne Kurtz and colleagues remind us, there is no ‘right or wrong’ form of communication, only whether it served its intended purpose (32). We use the term ‘debrief’ for this richer form of feedback.

Debrief after a clinical encounter is an opportunity to develop shared meaning-making and to highlight areas and potential strategies for personal development. Debrief can happen between learner and teacher, peer-to-peer, or in small groups but should happen as soon as possible after the learning encounter (hence, in our [Example 6.1](#), after each session for graduate doctors, and after each patient for undergraduate learners). Teachers can also model their learning processes by debriefing their own consultations with learners. A debrief need not start with what was done right or wrong – rather, with a rich description of what happened (explicit), what participants were trying to achieve (implicit), followed by collaborative meaning-making and co-creation

(and sometimes rehearsal) of alternative solutions. Where a learner is unsure whether they had missed something, attention and connections can be drawn to relevant models, theory or knowledge sources.

Debrief can also help to make explicit the implicit steps within a generalist clinical interaction (Table 6.1), thereby enabling learners to critique their own consultation processes, clinical reasoning and approach to uncertainty over time. With continuity, the process of debrief (Table 6.2) can support learners in developing a reflexive repertoire of internally available processes, questions and safety nets so that they become able to question their own clinical reasoning processes (for example, what is this likely to be, what does my patient think is going on, what else is possible or easily missed, what do I need to exclude now, what can wait, what might be unsaid? (33)).

Table 6.1 A generalist model of clinical interactions

Steps (not always linear)	Clinical focus (implicit aim)	Associated practices (how it might be achieved)	Potential debrief questions (open, probing or direct)
Connect	Bringing prior information forward. Ensuring people feel welcomed and accepted. Eliciting their story and concerns.	Checking notes. Welcoming, connecting, listening, observing, attending to emotions. Noting cues, clues, metaphors, concerns and gaps.	How did/could you prepare? How have they been since last reviewed? How did they seem when they first came in? What was their main concern? Do you feel you gave them enough time to talk? What emotions were expressed?
Forage (inductive)	Building a picture. Not trying to ‘diagnose’—aiming to approach a shared understanding of the issue(s).	Dialogue to probe, clarify and explore contextual information.	What were you most curious about? How did you explore that? What else might be relevant? (e.g. abuse, poverty, preventive measures, chronic care needs, etc.)

(continued)

Table 6.1 (Cont.)

Steps (not always linear)	Clinical focus (implicit aim)	Associated practices (how it might be achieved)	Potential debrief questions (open, probing or direct)
Problem-set	Together, negotiate how to frame and prioritise the current focus, noting anything important but not urgent to return to.	Trying different lenses (is this part of a wider issue, ongoing problem, contextual factors?), framing, negotiating.	Taking all this into consideration, what are the potential issues? How did you agree where to start?
Sort and seek (deductive-inductive loops)	Clinical reasoning. Exploring together the likely possibilities, causal factors, potential impacts. Testing ideas. Exploring red flags, potential implications. Considering what might be unsaid.	Sorting knowledge gained from patient. Sharing own thinking. Seeking new knowledge where needed (e.g. focused questioning, focused examination, external sources of knowledge).	Talk me through the possibilities. What is likely/urgent/important/easily missed? What would help you to sort them? What other information did you need? What did you find? Was that sufficient? Where else could you look/ask?
Integrate	Collaboratively configuring jigsaw pieces, acknowledging gaps, and negotiating next steps.	Sharing and inviting understanding. Agreeing how this shared understanding might inform next steps.	How did you bring all this together? What was your patient's analysis? How did you resolve any differences / agree unknowns?

(continued)

Table 6.1 (Cont.)

Steps (not always linear)	Clinical focus (implicit aim)	Associated practices (how it might be achieved)	Potential debrief questions (open, probing or direct)
Plan	Together, agreeing a personalised plan based on joint understanding, safety net, and confirming if/when to connect together and/or with others.	Exploring ideas for what might help. Agreeing and reviewing the plan. Creating a mitigation and review plan (what to do if ...).	What guidelines might be useful here? What ideas or preferences did your patient have? How did you agree on next steps / resolve differences? How did you confirm understanding and safety net? How did you hand over to the patient / another professional / the next consultation?
Review	Active and critical reflection. Record-keeping. Self-care and preparation for next patient.	Writing in the notes. Noting areas for reflection or debrief. Taking a 'breath' before the next patient.	Talk me through your record-keeping / prescribing / referrals. How do you feel that encounter went? Why? Were there any unmet patient needs? Is there need for additional follow-up, referral or ongoing conversation? What do you need to work on?

Table 6.2 A clinical debrief for generalist learning

Check in: acknowledge feelings, attend to immediate wellbeing	
Agree expectations: time constraints, priorities for feedback, privacy, etc.	
In parallel ...	
Learner summarises ...	Teacher (or colleague) opens notes and considers ...
• Clinical summary: ○ Summary of the patient's concerns and symptoms ○ What the learner explored, any examination findings ○ What the learner thinks might be going on, and why ○ What next steps were agreed with patient/carer, and reasoning. • Consultation processes: ○ What happened in the consultation including any consultation difficulties ○ What did not happen but should have ('what I knew but didn't do').	• Problem-framing: How was the problem framed? Might a different lens be helpful? How did the learner integrate future/past considerations and contextual information? • Patient perspective: In what ways were the patient's perspectives and priorities integrated, and how were differences resolved? • Gaps: What (if any) are the gaps? e.g. additional potential diagnoses or factors that need considering • Uncertainty and safety: How were serious causes considered (red flags)? How was uncertainty navigated (safety netting)? How were clinical guidelines used? • Housekeeping: How were the notes written and coded, and referrals/prescriptions done?
Collaboratively, and with critical reflexivity: • Discussion on why the consultation went as it did, including areas of excellence and missed opportunities • Plan for addressing any unmet patient needs ○ Is there a need for additional follow-up, referral or ongoing conversation? • Plan to address learners' educational needs ○ Strategies, frameworks, guidelines, theories, areas of understanding, consultation areas to work on ○ Agreed and recorded for follow-up (e.g. in e-portfolio)	

Conclusion

There are strong parallels between generalist approaches to education and clinical practice. Characteristics include being learner-centred, relationship-based, expansive and adaptive, positioning learners as active partners and participants in a learning ecosystem, and drawing dynamically upon different forms of knowledge to address what learning is needed for a particular situation or circumstance. Learning moves from something finite to something infinite: an incremental process that informs meaningful ways by which professionals enhance their clinical practice. In order to integrate clinical practice and learning, we need to articulate and make explicit the knowledge we use, and how we use it. Because the nature of generalist knowledge is complex and distributed, so too are the approaches to teach, learn and assess this knowledge. The content and approaches of generalist clinical practice and learning are both experiential and scholarly, and it is the ongoing connection between these which enables clinicians and clinical learners to adapt, re-form and apply their knowledge in previously unknown or unencountered circumstances.

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