Who Is the Master Adaptive Learner?

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**LEARNING OBJECTIVES**

1. Describe the characteristics of the ideal master adaptive learner.
2. Compare behaviors, skills, and attitudes used by a master adaptive learner with those of a less effective learner.
3. Identify characteristics within the learning environment that foster learning.
4. Discuss potential outcomes that demonstrate master adaptive learning.

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**CHAPTER SUMMARY**

Health care is provided in many different environments, including both inpatient and outpatient settings. Often the clinical teams are composed of members at various levels of training, which can provide both challenges and opportunities for effective care delivery and learning in the workplace. At its best, the clinical team can demonstrate that individuals across the undergraduate-graduate-continuing medical education spectrum can learn with and from each other, ultimately meeting the needs and improving the care of the patients they are serving. In this chapter, we describe the ideal master adaptive learner who utilizes a metacognitive approach to self-regulated learning that leads to the development and demonstration of adaptive expertise. The Master Adaptive Learner model offers a common language and shared mental model to facilitate conversation and learning among individuals across the training continuum.

**INTRODUCTION**

Before we explore the ideal master adaptive learner and supportive learning environment, let us first begin by considering a more typical scenario.

**“Typical Day” Vignette**

Lindsey Wong is a medical student who is (properly) excited to be on her pediatrics clerkship. She is working with attending physician Dr. Ludovico Smith and resident Dr. Nia Bloomberg on a general pediatrics inpatient ward team. In the morning, Lindsey joins Dr. Bloomberg in the workroom before rounds.

Lindsey: “Good morning! Were there any new patients overnight that I could pick up?”

Dr. Bloomberg: “Absolutely! We got slammed on top of our huge census. How many patients can you see?”
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Lindsey: “I’m comfortable with my two patients, so let me pick up one today.”

Dr. Bloomberg: “Why don’t you see this 11-month-old with cough for 5 days that got worse yesterday. I’d love to go over the important factors of his case with you, but I’m already behind on prepping all my notes for rounds. I need time just to get my work done.”

Lindsey reviews Simon’s chart. She sees that his respiratory rate has progressively gotten higher and wonders at what point he might need extra respiratory support. She starts to ask Dr. Bloomberg what criteria she should look for in impending respiratory failure but remembers Dr. Bloomberg is too busy to discuss the case. For her two current patients, Lindsey reviews notes since yesterday and prints their laboratory results and medications. She remembers one of her patients has copious data from her intensive care unit stay with diabetic ketoacidosis. Lindsey thinks to herself, “I hope Dr. Smith won’t ask me about these electrolytes. I don’t know why they were so off, and I won’t have time to look it up.” Avoiding that thought, she heads to Simon’s room first. Looking at her notes, she reads that Simon’s cough worsened yesterday along with a new fever. She hears him wheezing even before she enters the room. Looking up from the notes, she sees Simon’s mom rising from a slumber.

Simon’s mom: “Are you part of Simon’s team?”

Lindsey: “Yes, I’m the medical student who will be helping care for him.”

Simon’s mom: “I’m exhausted after being in the ER all day, but I have some questions now. Simon’s breathing pretty fast, and sometimes I hear him wheezing; does he have asthma? Why isn’t he on antibiotics yet?”

As they talk through everything, Lindsey starts to get nervous that she is not sure of the answers and will not have time to see her other patients.

Lindsey: “Well, I really need to get to rounds, so I’ll have to step out now.”

Simon’s mom: “I still have other questions. Will someone come back to talk with me?”

Lindsey (walking through the door): “The whole team will be back later this morning.”

Lindsey looks at her watch and realizes she will not have time to see her other patients. She rushes back to the workroom to find Dr. Smith talking with Dr. Bloomberg.

Dr. Smith: “I hear you saw our new patient Simon? Just give me the high points now.”

Lindsey feels flustered, but she pulls out her papers and prepares to give her presentation. She is not sure what to say or leave out, but she decides to start with her one-liner.

Lindsey: “Simon is an 11-month-old boy with no significant past medical history who presents with 5 days of cough, worsening yesterday with fever. He is now having trouble breathing and . . .”

Dr. Smith: “How high was the fever?”

Lindsey apologizes and starts looking through her papers. Dr. Smith looks at Dr. Bloomberg impatiently.

Dr. Bloomberg: “100.6, tachypneic at 65 bpm, satting at 92%. He has respiratory distress with nasal flaring and wheezing on exam. His older sister had a URI last week. Most likely severe bronchiolitis from RSV, though it could be . . .”

Dr. Smith: “Great. Give him oral dexamethasone, IV fluids, and some oxygen. Let’s go see him.”

Dr. Bloomberg thinks she remembers reading something about systemic glucocorticoids in bronchiolitis, but she focuses on writing down Dr. Smith’s orders because they are in a rush.

Lindsey: “Simon’s mom was wondering about antibiotics, in case it’s bacterial?”

Dr. Smith: “No, don’t even think about it. Antibiotic stewardship, Lindsey. Steroids, fluids, and oxygen. That’s the way I’ve always done it, and I’ve been around long enough to know it works.”

Many of us likely sympathize with the experiences of Lindsey, Dr. Bloomberg, and Dr. Smith as described in the vignette. Similar encounters are likely occurring in a variety of clinical settings. Many opportunities for learning were missed in the interest of “just getting the work done.” When considering the student and team in the previous vignette, but also individuals at all levels within the health care system at large, the topic of learning is a critical one. Each person in this vignette has learning needs that were suboptimally addressed. The absence of a shared mental model for their workplace learning prevented both individual and collective growth. Despite frequent calls for physicians to be lifelong learners, evidence does not support the idea that physicians currently learn and practice in such a manner, or at least not optimally. Physicians routinely continue to use existing solutions to problems they have previously solved rather than approaching patient care and health care system challenges in the context of new and ongoing learning. There is a gap between what is known in literature and the current practice of many physicians. This gap must be addressed with more effective identification of knowledge and skill deficiencies and with targeted learning to address them.
Additionally, physicians face a second gap between their current knowledge and novel challenges presented in the health care environment. Clinicians need adaptive expertise to recognize when the routine approach will not work and to reframe the problem in a way that allows for the incorporation of new ideas and concepts (learning) and the creation of new solutions (innovation) when appropriate. We describe adaptive expertise more thoroughly in Chapter 2.

A different type of learner, a master adaptive learner—described as an “individual who utilizes the metacognitive approach to self-regulated learning that leads to adaptive expertise development”—is needed.3 The Master Adaptive Learner (MAL) model brings together multiple strands from the general and medical education bodies of literature.4 It provides a common language and framework to facilitate self-regulated learning in individuals throughout the spectrum from medical school through residency training and into clinical practice. Individuals of any level can develop the skills and process of master adaptive learning, and once they do, they can synergistically reinforce each other’s learning and development.

The MAL model (Fig. 1.1) is described in far more detail throughout the subsequent chapters of the book, but we begin here with a high-level overview of its important components. The four gears of the MAL process form the center of the model representing the required phases of activity. The MAL model serves as a combination of staged physician learning and self-regulated learning.5,6

Planning is the first phase and includes three steps. The learner must first identify a gap in her practice, which could be one of knowledge, skill, or attitude. In the course of a given day in the clinical environment, learners ranging from students to practicing physicians likely encounter many such gaps.7,8 Step 2 within the planning phase is prioritizing one of those gaps as an opportunity for learning. Step 3 then involves searching for appropriate resources necessary for learning. Junior learners often skip the planning phase in the interest of “just getting to the work of learning.” The planning phase is important, however, in ensuring that the learning efforts are aligned with areas in need of practice change or improvement. The planning phase includes several critical skills (questioning, prioritizing, goal setting, and searching for resources).

Learning is the second phase in the MAL model. In this phase, individuals engage in the difficult process of meaningful learning. The learning phase includes the critical appraisal of learning resources to ensure time spent engaging in learning is appropriately focused. It has been said that, “Learning is deeper and more durable when it is effortful.”9,10 Learners in this phase are encouraged to use active learning strategies, as opposed to superficial approaches such as reading and rereading, highlighting and underlining, and cramming, all of which have repeatedly been shown to be ineffective in leading to long-term understanding and retention.11 We make the claim throughout this book that if clinicians are to learn effectively, they must have explicitly mastered the scientific principles of learning (the “master” in master adaptive learning).

The third phase focuses on assessing. In this phase, learners try out what they have learned by comparing and contrasting their self-assessment with external feedback. This combination, termed informed self-assessment (see Chapter 6), supports learning by disciplining and aligning gut feelings and in-the-moment judgments with as much available data and evidence as possible. By pairing unguided
self-assessment with external feedback, learners are able to continue to develop and calibrate their self-assessment skills while also benefiting directly from the external perspective.\textsuperscript{12}

The final phase of the MAL model is adjusting. This phase involves making actual changes to one’s practice based on the new learning that has occurred. For students, this can include incorporation of new ideas and understanding into their developing skill base, including clinical reasoning, approaches to given patient problems, and the creation and presentation of patient-specific assessments and plans. For practicing physicians, the adjusting phase involves changes to their own strategies for patient care. This can include everything from small changes, such as the selection of a different antibiotic for a given infection, to large changes, such as revising their approach to an entire category of patients. Skills necessary in this phase include the ability to differentiate how the new learning can and should be applied, as well as change management skills needed to implement change at the appropriate level of care provision (individual vs. health care system).

Readers familiar with the Plan-Do-Study-Act (PDSA) cycle from the field of quality improvement will recognize significant overlap with the MAL model.\textsuperscript{13} This was intentional. Personal improvement by clinicians often goes hand-in-hand with health care system improvement. The original creators of the MAL model encourage learners to consider constant PDSA cycles of themselves as learners with their own practice gaps (i.e., cycles through the MAL process).

Learning does not happen in isolation. There are significant aspects of the learner’s context that also impact the MAL process, as do other learner characteristics. Readers will note four batteries in the lower right corner of the MAL model in Fig. 1.1: curiosity, motivation, mindset, and resilience (see Chapter 4). These learner characteristics provide the power necessary for the learner to enter into and progress through the MAL process effectively. The concept of coaching is represented in the MAL model as a rheostat. While learning can and absolutely does occur without coaching, we firmly believe that learning will be more efficient and, importantly, more effective and coordinated with a coach’s involvement (see Chapter 12).

Finally, it is vitally important to recognize that the clinical environment for learning is very different from the more controlled environment of the medical school classroom or the continuing medical education course. As evidenced by the initial “typical day” vignette in this chapter, as well as the revised vignette that follows, the learning environment can strongly impact the individual’s learning in both positive and negative ways (see Chapter 11). Much has been written about the hidden curriculum within medical education, which can be both positive and negative for a given culture.\textsuperscript{14} Certain learning environments will support and foster effective learning and improvement of patient care, while others unfortunately will impede learning and lead to bad habits.

**WHO ARE OUR LEARNERS?**

Within the vignette, there are three levels of medical learners: the medical student, the resident, and the attending physician. (The patients and families, such as the mother of Simon, are also learners—teachers but are not specifically addressed in this book.) While the MAL process applies to learners of every level, the focus of adaptive learning may be different for each of them. For example, the medical student still has to learn many aspects of basic care of a child with bronchiolitis. The resident is learning to supervise the medical student while consolidating and expanding her own learning. Finally, the attending physician must also adapt his learning to the trainees, while both maintaining current knowledge within his medical specialty and considering the overall system’s impact on providing care for this type of patient. All three need to be master adaptive learners.

Using the previous vignette as an example and looking at the different phases of the MAL process, we could imagine how the learning of each member of this team could emphasize different stages of the MAL process. The medical student should be spending a significant amount of time in the planning and learning phases, developing clinical reasoning and illness scripts using evidence-based medicine. The resident in this scenario could be in the assessing phase, seeking direct feedback from her attending physician. Given that trainees and clinicians are historically poor at self-assessment (see Chapter 6), feedback within this phase is key to her development. The attending physician should be examining clinical practice guidelines from his specialty and, within the adjusting phase, changing his clinical practice. All four phases of the MAL process will apply to all levels of learners, though different learners may spend a larger proportion of time in a specific phase.

Now, we will examine a revised version of the “typical day” vignette to highlight how the MAL model and explicit consideration of the learning environment can improve learning for each member of the team.

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**Revised Vignette**

Lindsey: “Good morning! Were there any new patients overnight that I could pick up?”

Dr. Bloomberg: “Absolutely! We got slammed on top of our huge census. How many patients can you see?”
Lindsey: “I’m comfortable with my two patients, so I could certainly pick up one patient.”

Dr. Bloomberg: “Sounds good. I would like to get you to four patients by the end of this rotation. Why don’t you pick up this 11-month-old—Simon? He’s had a cough for 5 days that got worse yesterday with a fever. Before you go see him, what would be on your differential based on that information?”

[Note Dr. Bloomberg’s explicit expectation and goal setting, reference to the patient by name rather than disease, and prompt question that can serve as an advance organizer to help prompt learner thinking.]

Lindsey names a few possibilities but struggles to think of more. She also tells Dr. Bloomberg that she is unsure what to look for when she examines Simon and worries that she will not be able to put the pieces together before rounds. Dr. Bloomberg quickly assesses Lindsey’s knowledge base of the clinical presentation of bronchiolitis, and helps Lindsey expand her differential diagnosis and prioritize what to ask. Dr. Bloomberg would like to discuss the clinical features of severe respiratory distress in an infant, but she tells Lindsey that she is behind on prepping for rounds. She recommends that Lindsey read more about this complaint this afternoon, so they can discuss management together in more detail later. [Note how Dr. Bloomberg’s coaching helps Lindsey prioritize.]

After reviewing her three patients’ charts, Lindsey prints their laboratory results and medications. One of her patients has copious data from her intensive care unit stay with diabetic ketoacidosis. Lindsey hopes to ask Dr. Smith about the strange electrolyte results, which she does not understand. She quickly sees the patients she knows and then heads to Simon’s room. Before entering, she checks her watch to see how long she has. Simon’s mom is sleeping, and Lindsey wonders whether to wake her because she will not have time to answer questions anyway. Starting her physical examination, she hears Simon wheezing. Looking up, she sees that Simon’s mother is now awake. [Note Lindsey’s feedback-seeking behavior and willingness to admit areas for growth.]

Dr. Smith: “Great, that was the right level of detail and a good differential. Dr. Bloomberg, anything to add?”

Dr. Bloomberg: “Just that Simon’s older sister had a URI last week. For the x-ray, what would you look for, Lindsey?”

Lindsey: “An opacity, like a pneumonia?”

Dr. Smith: “Not a bad thought, but a chest x-ray is pretty low-yield if bronchiolitis is the most likely diagnosis. How much do you know about bronchiolitis?”

Lindsey outlines what she remembers from talking with Dr. Bloomberg and asks if it is accurate. In return, Dr. Smith makes a few clarifications and suggests that Lindsey read specifically about diagnostic
As you might have noticed, the characteristics of the learners and the context for learning were significantly different in this second vignette (Table 1.1). We aimed to highlight the potentially very positive aspects of certain learner characteristics and the learning environment and their subsequent impact on the individuals’ function as master adaptive learners. Let us now consider how the MAL process can differ across developmental levels.

**Medical Students**

Medical students hold a peculiar/wondrous/awkward/legitimate/sometimes peripheral position within the clinical workplace. Their primary objective is to learn and develop their skills, yet they must also contribute to the team’s work. Medical students are expected to have knowledge and skill gaps because they lack knowledge and skill compared with other clinical learners, but they are also being assessed on those very domains. Furthermore, these expectations vary dramatically over the course of their clinical training but may not match their performance trajectory. These conflicting pressures combined with students’ vulnerable status in the team make their motivation crucial. Students may be motivated extrinsically by attainment of positive assessments and would in that case be more reluctant to display their deficiencies. Conversely, curiosity can be a powerful driver for learning independently of the environment and learning culture. While in the “typical day” vignette, Lindsey is afraid to discuss a patient’s electrolyte results; in the revised version her strong curiosity and intrinsic motivation drive her to ask Dr. Smith about them. Overlaid on this student’s curiosity and motivation is her mindset regarding her intelligence and capacity for learning.

Because medical students will always have knowledge and skill gaps, depending on the motivation and resiliency of the student, these gaps may be framed by the student as failure. Without strong resilience and intrinsic motivation, a failure may be more likely to shut a student’s mind down and induce avoidance of future learning opportunities. Support from supervisors, especially residents who spend the most time with students, can help them move forward through the MAL process rather than getting stuck. In the revised vignette, Dr. Bloomberg helps Lindsey on multiple occasions, such as setting goals for the number of patients to follow and prioritizing knowledge gaps to address.

Reviewing the learning and knowledge gained on the part of the student is another method of support. For example, Dr. Bloomberg confirmed the accuracy of Lindsey’s understanding of bronchiolitis, as well as her recognition that Simon was in mild respiratory distress. In contrast to the missed opportunities in the first vignette, Lindsey is empowered by the team’s shared mental model for her learning and its inclusion in the clinical workflow. Furthermore, her self-inculcation of curiosity and growth mindset enables her to gain more knowledge via concrete learning goals.

**Residents**

For residents, several issues that can affect their learning and performance, as well as that of their medical students, are important to highlight. Patient encounters form the foundation of clinical learning in residency, representing a formalized shift in the learning environment to be fully workplace based, rather than largely classroom based. This change opens up multiple external factors that can influence a resident’s motivation and learning. Conflicting pressures exist because residents are both the central consumers of medical education in a patient interaction as they build their illness scripts and expertise and the individuals responsible for the actual delivery of medical care to patients. This is a key piece of a resident’s ongoing professional identity formation and requires that the resident balance the needs of patients with his own learning.
TABLE 1.1 Vignette Comparison.

<table>
<thead>
<tr>
<th>Behavior</th>
<th>“Typical Day” Vignette</th>
<th>Revised Vignette</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Student</td>
<td>Hopes to hide knowledge gaps</td>
<td>Explicitly tracks knowledge gaps and seeks help</td>
</tr>
<tr>
<td>Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning</td>
<td>Passive approaches (e.g., unstructured reading)</td>
<td>Emphasizes active learning</td>
</tr>
<tr>
<td>Assessing</td>
<td>Avoids feedback opportunities</td>
<td>Seeks feedback and calibration</td>
</tr>
<tr>
<td>Adjusting</td>
<td>Slow to adapt studying habits away from test-oriented studying</td>
<td>Deliberate practice of clinical skills</td>
</tr>
<tr>
<td>Resident</td>
<td>Reactive to clinical learning environment</td>
<td>Intentionally proactive</td>
</tr>
<tr>
<td>Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning</td>
<td>Prioritizes work over learning</td>
<td>Looks for opportunities to synergize work with learning (e.g., teaching)</td>
</tr>
<tr>
<td>Assessing</td>
<td>Sees quality improvement as separate from self-improvement</td>
<td>Demonstrates feedback-seeking behavior</td>
</tr>
<tr>
<td>Adjusting</td>
<td>Low levels of patient advocacy or self-advocacy</td>
<td>Change agent; uses high/intimate/detailed system knowledge to enact change</td>
</tr>
<tr>
<td>Attending</td>
<td>Knowledge/skill gaps identified through self-assessment alone.</td>
<td>Growth/open mindset; informed self-assessment for identifying gaps</td>
</tr>
<tr>
<td>Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning</td>
<td>CME siloed structure</td>
<td>Active approaches</td>
</tr>
<tr>
<td>Assessing</td>
<td>Rare, episodic</td>
<td>Continuous feedback-seeking behavior</td>
</tr>
<tr>
<td>Adjusting</td>
<td>Accepts system as it is; emphasizes routinized practice; adversarial</td>
<td>Health care system aware; collaborative; interdisciplinary; innovative</td>
</tr>
</tbody>
</table>

CME, Continuing medical education.

Practicing in his chosen clinical medical specialty should foster curiosity to learn all aspects of the field. However, this deep dive into a single specialty has a difficult learning curve, which can be disorienting when coupled with a potentially unfamiliar hospital system or city, or both.

Residents are additionally responsible for extensive documentation in the electronic health record for each patient encounter. This administrative burden has been associated with higher rates of burnout and may erode some of the inquisitiveness a resident possessed during earlier medical training. Without strong resilience, while working long hours with high documentation demands, residents may begin to view subsequent clinical encounters as taxing units of work, rather than focusing on the unique aspects of a patient’s narrative. This change in attitude can be costly to their development and impede their role in medical student learning.

In the “typical day” vignette, Dr. Bloomberg feels overwhelmed with her necessary documentation for rounds and subsequently is unable to help Lindsey with her identified knowledge gap. This results in a missed opportunity for Lindsey to learn, as well as for Dr. Bloomberg to further develop herself as an educator. In the revised narrative, Dr. Bloomberg does a better job by conveying short learning points, preparing for rounds, and setting up a plan for future learning opportunities. Efforts should be made to balance documentation and bedside clinical care responsibilities to maximize learning opportunities for residents. This type of effort could produce changes resulting from an effective adjusting phase in the resident’s own development as a clinician.

Residents may be hesitant to view themselves as teachers for medical students, feeling that they may not have sufficient experience or knowledge to pass along to
someone more junior in her medical training. While some level of discomfort with uncertainty among trainees is expected, residents can capitalize on the opportunity to model for medical students the importance of recognizing and acknowledging one's own knowledge gaps, seeking answers to clinical questions, and asking for feedback from more senior members of the team.\textsuperscript{17,18}

As shown in the revised vignette, Dr. Bloomberg could first start the conversation by assessing Lindsey’s level of knowledge, perhaps by asking, “What have you learned thus far about bronchiolitis?” or “Describe for me how you would tell the patient’s mother about bronchiolitis and our expectations for the patient’s care.” This would allow the resident to better plan targeted teaching efforts. Moreover, teaching medical students will consolidate the resident's knowledge and identify her own knowledge gaps.

**Practicing Physicians and Faculty**

For the faculty member, Dr. Smith, several important aspects could be examined. In the “typical day” vignette, it is obvious that Dr. Smith grounds his practice patterns in experience rather than adjusting his practice based on up-to-date clinical practice recommendations. He displays his rigidity by stating “That’s the way I’ve always done it” when discussing treatment care plans, which closes the door for any additional conversation and learning. Conversely, in the revised vignette Dr. Smith is open to discussing treatment regimens different from his own, which allows all the learners on the team, himself included, to examine the primary literature and updated guidelines. If this vignette were to continue, we would likely see Dr. Smith adjusting his practice pattern after further discussion with his team regarding the evidence surrounding the lack of efficacy of steroids for bronchiolitis. As the field of medicine continues to evolve, it is imperative that practicing physicians keep up with the latest advances in medical care. The effective faculty member should emphasize that learning is a lifelong habit by fostering inquisitiveness and modeling adjustment to practice when new evidence comes forth (see Chapter 2).

Finally, Dr. Smith may not realize how his attitude in this encounter may inhibit learning. By saying he wants to hear “just the high points,” Lindsey and the other team members may perceive that he is rushed and uninvested in their work and learning. Lindsey, who already feels flustered and who had already identified a gap in her knowledge, may be more hesitant to ask questions. In the revised vignette, Dr. Smith is a more effective educational leader. By setting shared expectations and listening attentively without interruption, he opens the door for additional learning opportunities for the medical student, the resident, and himself.

**CONCLUSION**

Adaptive expertise is needed in health care today to allow for the effective delivery of high-quality health care. The MAL model provides common language and a shared mental model to help learners at all stages of training develop the habits and approaches to learning that will lead to the development and demonstration of this adaptive expertise. The ideal master adaptive learners are those individuals who embody this process to continually improve themselves as learners and clinicians.

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**TAKE-HOME POINTS**

1. Clinical teams are composed of learners at many different levels.
2. The Master Adaptive Learner model is a learner-centered metacognitive framework.
3. Learners at different levels of training have different practice gaps but can address them with effective learning.
4. The learning environment impacts the ability of those involved to learn effectively.

**QUESTIONS FOR FURTHER THOUGHT**

1. What attributes of the practice of medicine today would benefit from clinicians becoming master adaptive learners?
2. Do current medical students, residents, and clinical faculty typically learn like master adaptive learners? Why or why not?
3. How might a student learner adapt to function differently in various learning environments? How might a master adaptive learner interact with a suboptimal learning environment?
ANNOTATED BIBLIOGRAPHY


   The authors provide the original description of the Master Adaptive Learner model.


   The authors examine problematic assumptions about clinical self-directed lifelong learning behaviors.


   McGlynn and colleagues demonstrate substantial gaps between national guidelines of recommended care and actual clinical practice, indicating a need for continued learning and adjustment far beyond residency.


   The authors examine factors within learners and in their learning environment that shape their learning process.

REFERENCES


Abstract: Health care is provided in many different environments, including both inpatient and outpatient settings. Often the clinical teams are composed of members at various levels of training, which can provide both challenges and opportunities for effective care delivery and learning in the workplace. At its best, the clinical team can demonstrate that individuals across the undergraduate-graduate-continuing medical education spectrum can learn with and from each other, ultimately meeting the needs and improving the care of the patients they are serving. In this chapter, we describe the ideal master adaptive learner who utilizes a metacognitive approach to self-regulated learning that leads to the development and demonstration of adaptive expertise. The Master Adaptive Learner model offers a common language and shared mental model to facilitate conversation and learning among individuals across the training continuum.

Keywords
adaptive expertise, metacognition, lifelong learning, self-directed learning