


Flipped Exam Room

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ABSTRACT: Medical education has taken a decided turn toward the “flipped classroom,” in which in-class lectures are de-emphasized and engaged learning is promoted. The time has also come to make some changes in what is being taught in clinical medicine, specifically with respect to the patient-physician interaction. Because the daily management of chronic illness is primarily the responsibility of the patient, clinical encounters that prioritize patient engagement and activation are critical. The traditional medical encounter, characterized by data gathering to make a diagnosis followed by prescribing or recommending treatment to the patient, can work well for acute illnesses or injuries, but effective chronic disease management requires substantial patient ownership of their health. In a “flipped exam room,” interactions with patients emphasize patient responsibility for health, such that priority is given to eliciting patient goals, what the patient knows, and how they desire to proceed with management of their health concerns and conditions. Just as medical students find engaged learning approaches to be more acceptable and satisfying, patients find collaborative interaction approaches on the part of their physicians to be more satisfying, and such approaches are associated with better outcomes. More attention to training students and residents in “flipped exam room” patient interaction skills is necessary.

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Introduction

It is time to “flip the exam room” in the clinical settings of medical education. Just as medical educators have been discovering that flipping classrooms leads to better learner engagement,¹ flipping the exam room might also be better for patients, and possibly for physicians. There are noteworthy parallels to consider.

In the not too distant past, lectures for teaching medical students were as ubiquitous as paper maps were for getting geographic directions. PowerPoint was the predictable medium. Medical students passively sat through lectures and subsequently aimed to make sense of the material to be memorized on their own time. Today, the lecture emphasis in medical schools is fading in favor of a “flipped classroom” approach.¹ Instead of using in-person class time for professors to tell students what they need to know and study, medical students come to class prepared to apply what they have studied on their own to solve problems.

However, medical students often observe the traditional “lecture model” in physician-patient interactions in the clinical settings in which they train. While contemporary medical school curricula may emphasize patient engagement approaches, students are not necessarily seeing these approaches modeled in the clinical setting. Physician awareness of patient engagement approaches such as motivational interviewing is frequently not matched by skill nor implementation.²⁻⁶ Therefore, students often observe physicians telling patients what to do and why, along with offering advice on how to implement the recommended or prescribed treatment. An “educate and advise” approach has the physician “in charge” of the patient’s behavior, when in fact, physicians do not have that control. The absence of

ownership on the part of the patient reduces the likelihood that the recommendation will be implemented.

Just as medical school classrooms are being “flipped” to a more engaging pedagogical approach, there is a parallel need for the exam room to be “flipped” to more effectively engage patients in the care of their health. What follows is a brief description of the flipped classroom approach in medical education, a review of important shortcomings of ordinary patterns in how physicians interact with patients, and how flipping the exam room constitutes a critical step toward better equipping future physicians for the challenges inherent in chronic disease prevention and management.

The Flipped Classroom

A flipped classroom can be considered a set of approaches in which most information-transmission occurs outside of a class, class time itself is dedicated to activities that are interactive and social, and students are required to complete activities both prior to and after in-class time to obtain maximum benefit from in class activities.⁷ In a flipped classroom approach, medical students are given more responsibility for determining what and how to learn. Material is studied and learned prior to class, so that in-class activities can be focused on the application of what has been learned to solve relevant problems which are often case-based. The instructor listens to student learning objectives, and what has been learned and discovered with respect to those objectives. At this point the instructor’s role is not to simply reiterate what is already known, but rather to guide further exploration using questions to deepen learning or understanding.



The transition from a traditional to a flipped classroom can be challenging for faculty members, as un-attaching oneself from the classroom control that accompanies the lecture-based model in order for students to identify their own learning objectives is unfamiliar and uncertain territory. Barriers to adopting the newer approach may be both internal (eg, beliefs, confidence) and external (eg, resources).⁸ Nonetheless, a meta-analysis of 198 studies found such “active learning” or “engaged learning” approaches to have a moderate positive effect for students across a number of disciplines.⁹ The flipped classroom is transforming medical education and is said to better prepare physicians-in-training for the lifelong learning necessary in their medical careers.¹ With the “flipped” approach, learning is found to be more durable and meaningful when it requires more effort from the learner.¹⁰ While medical students may desire to be told what to study or what they need to know, they generally have expressed satisfaction with the flipped classroom approach, reporting increased learner motivation and engagement.^{11,12} It is also more consistent with the most current science regarding effective learning approaches.¹⁰

Physician Communication Patterns and Patient Engagement

While many physicians may say that they do not “lecture” their patients, it is easy for them to default to a communication pattern in which they are telling the patient what to do and why, without fully eliciting patients’ perspectives.³⁻⁵ Unfortunately, education and advice alone rarely lead to sustained behavior change, leaving both physicians and patients frustrated.¹³ This time-honored, but largely ineffective, approach is what medical students often observe and emulate. It is noteworthy that “I didn’t want to be judged or get a lecture about my behavior” was recently reported to be the top reason why patients avoid telling their providers about important health related information.¹⁴

In the United States, morbidity and mortality is largely due to chronic illness, such that approximately 60% of adults have at least 1 chronic condition and over 40% have 2 or more chronic health problems.¹⁵ Appropriately, there is emerging advocacy regarding the need to give more attention to chronic care in medical education.¹⁶ This is not to suggest that medical students do not need to learn the skills necessary to make diagnoses and determine most effective treatment plans. But since the prevention and management of chronic illness is primarily the responsibility of the patient,¹⁷ medical students need to develop proficiency in how to promote patient engagement in this process. Desired outcomes for chronic illness usually occur only when patient ownership for their health has been developed and patients choose the treatment or recommendations to which they will adhere. Patient-centeredness includes appreciation of the myriad of social determinants affecting a given patient, and the patient’s perspective on how these impact the options that can be considered. The amount of attention given to patient engagement skills in most medical school curricula is

disproportionately small compared to the evidence that patient behavior has a greater impact on health outcomes than does clinical care.¹⁸ In this context it is important to note that the United States has poor health outcomes relative to other high-income countries in spite of spending more than any of these other countries,¹⁹ and that 90% of health care expenditures are for people with chronic and mental health conditions.²⁰

Even though it is well established that numerous factors affect health behavior other than knowledge itself, the traditional approach to patients belies an assumption that knowledge is sufficient for behavior change.^{21,22} Aside from the scientific literature, personal reflection on one’s own health behaviors that are not commensurate with leading health recommendations showcase that knowledge itself does not result in behavior change. In spite of extensive knowledge about healthy lifestyles, physicians themselves struggle with establishing and maintaining healthy habits.^{23,24} Just as solely lecturing students does not lead to the best educational outcomes, solely lecturing patients does not result in optimal health outcomes.

The majority of patients know that smoking, overweight/obesity, and being very sedentary are unhealthy, and that a diet rich in vegetables is healthier than one dominated by convenience foods.^{25,26} And patients typically recognize that when a physician prescribes a medication or initiates a referral, adherence is the expectation. However, it is estimated that only one-half of those with hypertension in the United States are well-controlled, largely because of the prevalence of nonadherence to antihypertensive medications and recommended lifestyle changes.²⁷ The most widely-cited adherence rate for medications for chronic illness in general is only 50%.²⁸ Medical and health-related information is readily available to most patients via multiple sources, both reliable and otherwise. Patients already come to the exam room knowing general ideas of how their health behaviors impact wellness, and it is important for the physician to elicit what the patient knows and expects. This helps the physician be more targeted and precise with any educational needs that the patient does have. Patients may ask to be told what to do (ie, “you’re the doctor”), yet this might be reflective of preferring to give responsibility to the physician rather than owning responsibility for oneself. The fact that patients withhold health-related information to avoid being lectured is itself reflective of patients already knowing what they “should” do.¹⁴

Doctor literally means *teacher*. But *doctor* does not inherently mean lecturing, telling, or directing. Many of the best teachers are those who guide using Socratic exploration with students, an approach that requires intention and practice. The Stoic philosopher Epictetus is quoted as saying, “We have two ears and one mouth so that we can listen twice as much as we speak.” Recent data indicating that physicians tend to interrupt the patient after only 11 seconds into the patient’s description of the chief complaint suggests the need for anatomical reminders.²⁹ Patient-centeredness is about listening, so that one can begin to

understand how things look from the patient's point-of-view. Just as the flipped classroom is an approach that aims to increase student engagement, by extension the flipped exam room aims to enhance patient engagement and activation.

The Flipped Exam Room

In a flipped exam room, an approach such as motivational interviewing (MI) is ubiquitous. MI is a collaborative conversational style for strengthening a person's own motivation and commitment to change and is an approach that fosters patient engagement.^{2,30,31} The physician elicits what the patient already knows about their chronic conditions, and learns about the patient's own health and functional goals. This is followed by further exploration of how the patient wants to proceed, considering their current health status and future prognosis, available treatment options and resources, and the patient's personal values and priorities. An encounter in which it is the patient, rather than the physician, who is making the case for healthy behavior change or adherence to indicated treatment is evidence of a flipped exam room.

The flipped exam room approach also involves recognition of the distinction between doctor work and patient work. For the patient with diabetes, ordering labs, interviewing the patient, and performing the physical exam are doctor work. Doctor work also includes identification of indicated changes in treatment that ought to be made, which may include modifications in lifestyle. However, the choices regarding recommended treatment options and decisions about whether a treatment or indicated behavior changes will be implemented are patient work. Coming up with implementation strategies for behavior change is also patient work. And while the distinction between doctor and patient work is critical for chronic disease management, patient engagement is necessary for optimal outcomes in acute conditions as well.

This means that patient engagement is not simply a matter of clicking boxes in the electronic health record or documenting that the patient was told what to do. Rather it involves liberal use of open-ended questions and reflective listening in order to identify the values, goals, and priorities that truly matter to the patient. One can Socratically and supportively explore areas where there are marked discrepancies between a patient's values/goals and their current behavior. Patient emotion and discrepancies are crucial but often overlooked components of motivation for adherence and/or behavior change. This exploration can empower the patient to identify and activate changes available and beneficial to them despite identified societal and personal barriers.

"But I do not have enough time to do this." Just as time is a perceived barrier for instructors transitioning to a flipped classroom approach,⁸ time is a commonly perceived barrier to practicing a flipped exam room approach.⁶ Indeed, physicians have numerous task demands on them to accomplish in short patient visits. Yet much time gets spent telling patients what they

already know, or making recommendations, referrals, or prescriptions that the patient may not or may not be able to implement. For example, a doctor may take time to make suggestions for what the patient ought to do or try, only to have the patient explain why the suggestions have already been tried or will not work. It is better use of time for the patient to come up with options, and evaluate the potential of each, a process consistent with a flipped exam room approach. And this patient work does not all need to be completed during the current appointment. Chronic disease management is a long-term process, so that much of patient work is done between appointments, just as students in a flipped classroom do the bulk of their work between in-class sessions.

Many medical schools already include training in motivational interviewing (MI) at some point in their curricula, but there is much variability in how and when it is addressed and assessed.³² A text such as *Motivational Interviewing: A Guide for Medical Trainees* can be very useful to medical students for gaining familiarity with the approach outside of class.³³ Repeated exposure and sequenced learning are important for skill development, as is acceptance of the importance of learning and practicing MI in the broader medical culture. This is particularly critical in the clinical aspects of training, so that students see MI modeled in the settings in which they train. Much facilitated practice is required for the MI approach to become second nature, so ideally there is exposure to and practice of MI in the early years of medical school, in the clinical years, during residency, and in continuing medical education. The use of online virtual platforms for role play practice and student involvement in telehealth visits represent opportunities for expansion of MI training, and the use of artificial intelligence to create metrics for use in MI training is in development.³⁴

Conclusion

While the flipped classroom is student-centered with learners taking ownership for their education, the flipped exam room is patient-centered with patients themselves ultimately determining their health goals and priorities. Just as data indicate that engaged learning is more acceptable and satisfying for medical students,^{11,12} patient engagement and activation is more satisfying for patients,³⁵ and leads to better outcomes.³⁶ A patient being told "you really need to lose some weight" is going to be less satisfied and less motivated than when asked, "if you were to make one change that would be good for your health, what would it be?"

The student who is struggling with academic work or the patient who is struggling with adherence or lifestyle change both benefit from compassion and understanding on the part of the instructor or doctor, respectively. In such cases, nonjudgmentally eliciting the learner's/patient's experience and identification of barriers, exploring what the learner/patient might consider to be alternative strategies, and allowing the learner/patient to develop their own plan of action are consistent with

the flipped approach. Furthermore, such behavior on the part of the instructor/physician contributes to the kind of trusting relationships that are most conducive to positive change.

Neither the university nor the clinic have traditionally been structured for “flipping.” Letting go of the classroom control that comes with PowerPoint slides can be challenging for medical school faculty, and letting go of exam room control by inviting patients to set the agenda can similarly feel uncomfortable. Yet a high-priority developmental challenge for clinical faculty of medical schools whom medical students observe and emulate, is to learn and practice a flipped exam room approach, even if becoming facile with a patient engagement approach such as motivational interviewing takes persistent effort and practice.³⁷

Potentially all 4 components of the Quadruple Aim in healthcare can be addressed with the flipped exam room. *Better outcomes* and *lower costs* are associated with greater patient responsibility for management of their health.³⁸ *Patient satisfaction* tends to be related to the perceived trustworthiness of the physician, which itself is affected by the quality of physician listening and communication skills.³⁵ And meaningful engagement and experiencing a sense of efficacy with patients are important elements of *physician well-being*.³⁹⁻⁴¹ As medical students observe and learn to practice the flipped exam room approach, an important step will be taken toward preparing a 21st century physician workforce capable of more effectively serving a population for which chronic disease management is the primary health challenge.


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Author Contributions

All authors substantially collaborated on the development of the perspective and ideas expressed in this article, participated in drafting and critically revising it, and approved the version to be published.

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