

How will you get access to course content?

This class is designed using a *flipped-learning model* for instruction. Let's compare the way college classes are usually conducted, which we'll call the *lecture-based model*, to the way we engage in flipped learning. The *lecture-based model* for in-class work forces you to do the hardest learning tasks when you are by yourself outside of class. In this model, a teacher dedicates in-class time to low-level learning tasks. Specifically, in the lecture-based model for instruction, a student gets their first exposure to course content *during* in-class meetings via a live lecture delivered by the teacher to a room full of students. Such lectures are usually given in a monolog-style speech where the vast majority of the speaking is done by the teacher to the students. By the end of the lecture, teachers have presented a long list of technical content to the students sitting in the room. After the in-class meetings end, students are expected to engage in higher-level learning activities like sense making, problem solving, and creative work. In a lecture-based classroom, the out-of-class activities typically involve deeper thinking and harder intellectual tasks. But, because in-class meetings are filled by the teacher talking at you, this leaves no time for collaborative group work to support deeper learning. Thus, in a lecture-based classroom, you are expected to do the hardest part of learning when you are alone outside of class, isolated from your peers, and away from the teacher.

The *flipped-learning model* uses in-class time very differently than the lecture-based model. In our flipped learning classroom, we develop the expectation that you are responsible to get your first exposure to new content outside of our in-class meetings. You can do this by either watching my YouTube videos that cover course content or by reading my lecture notes. For each video I make, I also draft notes that cover similar content as is presented in the video. So, you have a choice of how you engage with the course content: either via YouTube videos or by reading my lecture notes.

One of the powerful features of discovering new material outside of class is that you can customize your time to engage with the content in the way(s) that make most sense for you. You can explore at your own pace. You can get creative with how you capture your learning. You can focus on making sense of the material during your first pass through rather than mindlessly copying everything I present in my notes. You can take extra time to write down your questions and capture your own thoughts about the content. You can process the information slowly to build deeper connections between new ideas and your previous learning. Moreover, since your first contact with the course content happens outside of class, we can repurpose our in-class time for higher-level learning tasks.

During our in-class meetings, we engage in many types of learning. For example, you will work on journal entries that help you improve your learning skills. You will also spend time with your learning partners and in small groups reflecting on your individual progress, brainstorming on how to deepen your learning, and building relationships with other students. You will learn how to capture questions that you generate during your out-of-class explorations so that you can pose these questions to other students in the class. One of my goals is to challenge the belief that the only way to get your questions answered is to ask the teacher. Instead, I want to help you realize that other students in this class are extremely valuable resources who can help you find answers to almost any question you imagine.

When you pose questions to other students in our class, not only do you get support for your learning, but you also push your peers to become more skilled with the content. Similarly, when you work to answer other peoples' questions in meaningful ways, you develop new expertise and explore new facets of the knowledge you're building. Indeed, one of the best ways to learn new content is to teach others. I like to say: "The who can, do. Those who teach, do better." Every in-class meeting is an opportunity for peer instruction. The sooner you develop system to capture your questions outside of class and engage in question-and-answer sessions with your classmates, the more effective you will be at leveraging in-class meetings to dive deeper into course content. In addition to the dialog rich meetings with your classmates, you will also be working on shared problem solving. For each lesson in this class, I've drafted a list of problems designed to push you beyond the lecture content to synthesize new understanding and deepen your learning.

Finally, you will be meeting with me every week in small learning groups to engage in learning conferences. During these meetings, you'll share your progress in building your learning portfolios. As a team, we will brainstorm ideas to maintain your progress and improve your learning skills. Through this individualized coaching, we will help you develop new skills so that your work in week 12 of this course looks very different than your work in week 1 of the course.

My short answer to this question is that I have lots of evidence that lecture-based instruction is bad for learning. I saw this was true in every one of my classes during the 10 years of college that I survived. As a young instructor, I witnessed so much harm that I caused many of my students when I used traditional lectures to deliver content. I also am aware of research-based evidence that demonstrates lectures to be harmful for learning. For example, check out the paper [Active learning increases student performance in science, engineering, and mathematics](#) by Scott Freeman and company. That paper reviews 225 academic studies on examination scores and failure rates that compare student performance under traditional lecturing versus in courses that use active learning (of which flipped learning is one example). The authors show that students who engage in active learning do better on exams than students who are in classes that feature traditional lectures. Moreover, students in traditional lecture courses are 1.5 times more likely to fail than students in classes that feature active learning. My favorite quote from that paper is:

“The results (in this paper) raise questions about the continued use of traditional lecturing as a control in research studies, and support active learning as the preferred, empirically validated teaching practice in regular classrooms.”

Translation: Using lectures to inspire learning is like using cigarettes to promote physical health. Just like we have scientific evidence that cigarettes cause cancer, we also have scientific evidence that demonstrates that lectures are harmful for learning.

For a longer answer to the question of why I don't use the lecture-based model, let's explore how I define my role as a teacher. My current draft of an antiracist, research-based definition for teaching is as follows:

Teaching is the act of facilitating, inspiring, encouraging, supporting, and empowering learning. In other words, a teacher is someone who stimulates learning (we'll explore a formal definition of learning and models for learning in later work we do in this class). Because teaching happens within a social context, the work of a teacher is about creating an environment that helps students learn and liberates students from larger structures of oppression that might block, impede, or constrain their learning.

This is closely related to one of my favorite quotes:

“Learning results from what the student does and thinks and only from what the student does and thinks. The teacher can advance learning only by influencing what the student does to learn.”—[Herbert A. Simon](#)

In my teaching practice, I work hard to make design decisions based on deep research on how learning works and to create the types of environments that are conducive to putting you in control of your learning journey. My task is to empower you to create your own learning experiences that are customized to your unique identity, interests, and lived experiences. Central to this task, I believe, are your visions and dreams for your world. My hope is that the experience we create together will accelerate your ability to make meaningful progress on the problems you care most about.

One of the challenges we face is to help you learn how to track, monitor, and reflect on your own learning. These tasks are quite difficult and involve a lot of mental energy. If I'm serious about teaching (as defined above), the lecture-based model for instruction gets in my way. When I abandon that model and use flipped/active learning techniques to support you in this class, I re-center you as the most important person in your learning journey. Together, we create structures to put you in the driver's seat to track your own learning and assess your progress throughout this class.

I believe lectures are harmful to student learning. This belief is based on my lived experiences and on scientific studies of how learning works. Let's explore some of the features of the lecture-based model that are problematic for inspiring deep learning. Identifying these issues is an important first step in creating learning routines that center deep learning and protect you against the harms caused by traditional lectures.

Problem 1: The lecture-based model constrains your ability to process information

Students who are sitting in a live lecture are forced to process new content as fast as the teacher can talk. Sadly, teachers can talk much faster than students can write. Studies of human speaking and writing speeds have found that people can talk at around [100 – 130 words per minute](#). But most humans can write only [50 -100 legible letters per minute](#) (translating into about 10 to 20 average-length legible words). Moreover, there is a lot more information available during a live lecture than just what the professor says or what is written on the board. There are tons of nonverbal information available in the room and a complex web of social relationships/contexts that exist among the people in the room. It is physically impossible to capture all that information in a way that supports long-term learning.

To minimize the harm caused by the imbalance between the large quantity of information being spewed by the lecturer and students' limited capacity to capture/process that information, students often blindly take notes. This problem can be summed up by a famous quote, often attributed to Mark Twain, that goes like this: "College is a place where a professor's lecture notes go straight into the students' lecture notes without passing through the brains of either." If we are serious about helping you learn the course content, we must empower you to process new content at your own pace. You are the world's leading expert on your own learning processes. You are only person who should decide the best pace at which to explore new content. By using a lecture-based model for instruction, the lecturer blocks your ability to pace yourself and thus limits your ability to process course content while in class.

Problem 2: The lecture-based model forces the hardest part of learning to happen in isolation.

The lecture-based model forces you to do the easiest learning work when you have access to the richest learning resources and the hardest learning work when you are most isolated from the learning communities that exist in your classes. In this class, we will explore a [five-stage model](#) for [how deep learning works](#). You will also practice research-based techniques to [progress through the five stages](#) of [deep learning](#). The goal of this work is to help you learn deeper, develop more effective study routines, and create more efficient learning habits that allow you to find a balance between your learning life and other parts of your identity.

Getting initial exposure to course content is the first and easiest stage in our [five-stage model](#) for deep learning processes. Listening, [exploratory reading](#), and taking cursory notes are relatively low-level cognitive task. However, after you've discovered the course content for the first time, you can proceed to more advanced stages of learning including building deeper understanding. This includes mid-level learning tasks including sense making, slow thinking, creative processes, identifying connections between the new content and your previous learning, capturing ideas and questions that arise as you study, organizing new content in a system that allows for future retrieval, and exploring multiple dimensions the new knowledge you're building. Perhaps the most advanced learning techniques you can use involves engaging in authentic dialog with other learners at various levels of mastery. This includes posing questions to your peers, trying to answer other peoples' questions, engaging in group problem solving, and teaching others the content you're studying. These powerful learning techniques lead to the deepest learning. The more time you spend on these types of mid- and high-level learning work, the deeper the learning you create. Let's compare the various types of learning tasks described above with the context in which you might do that work.

In-class meetings can be extremely valuable experiences. When you are physically present in class, you have access to the best group of people on earth to support your learning. You are in the physical presence of a large group of other learners who are working on, thinking about, and struggling with the same content that you are. You have easy access to a resident expert (the teacher) who is physically available to you.

However, when you are outside of class, it becomes much more difficult to get access to this rich support network. You are separated from other students and the teacher by space. Everyone in the class likely has many other time commitments that block synchronous communication outside of the scheduled class time. In fact, in-class time may be the only weekly time blocks in which every member of the class is available to engage in shared learning. When you try to recreate this type of environment outside of class, you are responsible coordinating meeting times, determine how to communicate, and find spaces to work. That places an almost unsurmountable burden on each individual student to find help for their higher-level learning needs. This issue is so complex that many students end up learning alone, in isolation from their peers. In the lecture-based model for instruction, students engage in the lowest-level learning tasks exactly when they have access to the richest support resources. Then, after the lecture ends, students are tasked to do higher-level learning work when the best resources to support those tasks are no longer easily accessible.

Problem 3: The lecture-based deprioritizes time for active, guided, social learning experiences

In the lecture-based model for instruction, the vast majority of in-class time is dedicated to the teacher delivering monologues to the students. In contrast, relatively little time is spent on activities other than lecture. Students are not shown how to prioritize question and answer sessions, social problem solving, or peer instruction. The implicit message sent to students in a lecture-based classroom is that the most important part of the learning experience is what the teacher is saying not what the student does with that new knowledge. This leads to a distorted model for learning in which students come to believe that the most important learning happens when the teacher is talking. The exact opposite is true. The most important part of learning happens when students struggle with material, work to make sense of new ideas, and engage in peer instruction with learners at various levels of mastery. In a lecture-based classroom, these types of activities are deprioritized. Each student is forced to do this important work on their own time outside of class where support resources are not readily available.

Problem 4: The lecture-based model does not center meta-learning.

Meta-learning is a process by which you become aware of and learn to control of your own learning habits. When you engage in [meta-learning](#), you pay careful attention to all the following:

- how you perceive new information
- what you do to capture and organize your growing expertise
- what inquiry habits you use to track questions and concerns while you learn
- how you find and develop compelling answers to your questions
- how self-aware you are of your learning processes
- what self-assessment techniques you use to measure progress in your learning
- how you discipline yourself to produce your desired results
- how you take responsibility for your own learning
- what motivations you have for learning
- why you engage in learning
- why you value your learning
- how you plan to use your new skills/knowledge to empower your local communities

Meta-learning is about being aware of and taking control of your own learning processes. In short, meta-learning is learning how to learn.

It is possible to engage in meta-learning while in a class taught using a lecture-based model. Indeed, students who thrive in lecture-based classrooms often leverage meta-learning to accomplish their goals. However, such self-reflective behavior usually happens to counteract the harm of in-class lectures rather than being inspired by them. The lecture-based model for instruction almost never puts an explicit focus on meta-learning as part of the in-class experience. Indeed, the entire in-class lectures position the instructor as the source and gatekeeper of knowledge and the omniscient judge of learning. By centering the lecturer in this way, many students never explicitly strengthen their meta-learning skills. Instead, students are constantly trying to figure out what the teacher is saying, what the teacher wants, and what they must do to prove they have learned. This type of external focus on the actions, thoughts, and desires of the lecturer short circuits the type of introspection needed to practice meta-learning routines and undermines students in developing their self-directed learning skills.

Problem 5: The lecture-based model inhibits dialog and blocks authentic learning relationships.

The most transformative learning experiences are grounded in authentic and meaningful relationships. These include the student-teacher relationship and peer-to-peer relationships. Academic research in the fields of communication, psychology, and sociology affirms that students are most engaged, motivated, and interested in learning when they are part of a supportive classroom environment that features meaningful positive relationships with their teacher and their peers. Moreover, perhaps the very best activities that students can engage in to make deep learning happen and to remember complex ideas is to explain those ideas to other students. This includes summarizing your learning, developing highly intuitive, nontechnical language to encode new ideas, answering questions, addressing critiques, working through sticky points, identifying misconceptions, making mistakes, iteratively improving your understanding, and engaging in shared problem solving by applying your learning to new contexts. We'll call these forms of student-to-student interactions *peer instruction* which is perhaps the most powerful mechanism for inspiring deep learning. Peer instruction has the added benefit of building friendship, solidarity, and respect among students.

To engage in peer instruction and build positive relationships requires time, space, patience, and practice. Strong professional learning relationships should honor your full humanity. These types of bonds should respect your lived experience, celebrate the person you are today, and revere the person you seek to become. To create these types of relationships requires ample time to engage in dialog. You need to be invited you to bring your full self into the space and to participate in meaningful learning tasks with other learners (including the teacher). Lecture denies you these opportunities. During a lecture, it is considered rude and disruptive to speak with other people in the room. Ironically, the best thing you can do to learn new concepts is to engage in dialog about those ideas. Lecture stops you from doing that. Lecture denies students the chance to be in dialog about their learning, to immerse themselves in peer instruction, and to deepen their learning relationships with other members of the classroom community. The choice to lecture circumvents what should be the most important part of the learning process: dialog and relationship building to support learning.

Problem 6: The lecture-based model propagates a banking model for education.

The banking model for education posits that students' brains are like empty bank accounts and the job of the teacher is to make deposits. Instead of depositing money, the teacher simply needs to pour knowledge into the student. This banking model presumes that when a teacher lectures, they fill students with knowledge. This is a dehumanizing model for how learning works since it is premised on the inaccurate assumption that students are passive, meek receptacles of knowledge rather than complex, creative, intelligent human beings. As discussed in [Paulo Freire's *Pedagogy of the Oppressed*](#), the lecture-based model for education includes all of the following assumptions:

- The teacher "teaches" and the students are taught.
- The teacher knows everything, and the students know nothing.
- The teacher thinks and the students are thought about.
- The teacher talks and the student listens in meek, passive, submissive ways.
- The teacher disciplines and the students are disciplined
- The teacher chooses knowledge and enforces his choices while student comply with the teacher's choices.
- The teacher acts and the students have the illusion of acting through the action of the teacher.
- The teacher chooses almost all curriculum, content, and course material. The students (who are not consulted about the material) adapt to this content. This leads to a learning environment in which teachers expound on topics completely alien to the existential experience of the students.
- The teacher confuses their authority of knowledge (expertise) with his own professional authority (power to set classroom policies). Thus, the teacher creates policies that undermine and oppress the freedom of the students.
- The teacher is the subject, the central character, and the active participant of the learning process while the students are mere objects for the teacher to manipulate.

All these features are designed to centralize authority in the teacher and oppress the free will of the students. This mirrors larger oppressive systems in society. The banking model of education is a mechanism of domination and control, serving the interests of the oppressors by controlling the thinking, action, and learning of the students. This inhibits the students' creative power and indoctrinates students into a world of oppression.

Problem 7: The lecture-based model hides harmful policies decisions to short circuit critical consciousness.

Finish later

Who benefits of the lecture-based model for instruction?

Finish later.

Why do lectures cause all these issues?

It's natural to wonder why the lecture-based model is so harmful. The answer to this question is about power and the ability to set policies to allocate resources in the service of learning. Some of the most important resources that effect how students learn are the ways time and space are used within the context of a college course. Remember our quote:

“Learning results from what the student does and thinks and only from what the student does and thinks. The teacher can advance learning only by influencing what the student does to learn.”—[Herbert A. Simon](#)

If you dive deeper into that quote, you might come to realize that what you do and what you think are dependent on the spaces in which you are located and the ways you spend time in those spaces. The lecture-based model for learning allows the lecturer to monopolize your time and to dominate the shared space within the classroom. This crowds out your unique identity and detracts from your ability to customize your learning experiences to meet your own needs.

In our flipped classroom model, we work together to help you learn how to exert more control over your time, to advocate for your learning needs, to assert yourself, and to transform your learning spaces to align with your visions for the world. To do this, we need to explore the different spaces you experience while working to learn in college. Following the work of the educational author [Robert Talbert](#), let's extend our definition of the word *space* to include not only physical space but also the emotional, intellectual, and psychological contexts that you encounter as you engage in learning. We'll identify three categories of space including individual space, out-of-class group space, and in-class group space.

What is individual space?

Individual space is any context where you work by yourself outside of the formal in-class meeting time. You learn in individual space when you work in your home, in your city's library, in your college's library, in a tutoring center, in a quiet corner on campus, at a coffee shop, or anywhere where you work by yourself. When you learn in individual space, you focus on your individual effort without engaging in synchronous dialog with other learners. The term individual space does not mean you are physically isolated from other people. In fact, there might be lots of other people around you as you learn in individual space. However, the important point is that when you are in individual space, you are doing work by yourself and not engaged in conversation with the people around you.

What is out-of-class group space?

Out-of-class group space is any context where you work in small groups that meet outside of the formal in-class meeting time. This might include problem solving or question-and-answer sessions with your learning partners or any other learners in your community. This can also include office hour visits with your teacher or discussions with your teacher right before or right after the formal in-class meeting times. You work in out-of-class group space when you are meeting with your learning friends in a library, in a study room, in a tutoring center, in a coffee shop, at someone's home, or at a local park. Your work in out-of-class group space focuses on building relationships with other people in the class and learning in small group settings.

What is in-class group space?

In-class group space is any context in which you learn within the formal in-class meeting. This work includes activities you complete in class with all other students or with special subset of students such as small groups formed during class. You are part of in-class group space when you attend regularly scheduled in-class meetings, during a field trip with the entire class, or during a special tutorial session attended by the teacher and most class members.

How do our definitions of space relate to the activities we do in those spaces?

When you encounter in-class group space, you might not be doing group work. Indeed, in the lecture-based model, in-class group space is filled by the lecture's monologues and results in very little group interaction. In fact, the only person who is engaged in [deep learning](#) during a lecture is the person who is talking. Everyone else is constrained by that person's performance and limited to passive observation. Let's cement our understanding of why this might be true by developing an analogy.

Suppose you sign up to learn how to run your first marathon by joining a running team. On that team are a bunch of other people who are trying to run their first marathon. The team also includes a coach who is a professional runner. Perhaps your coach has run hundreds of marathons over the last 15+ years of their life. In this context, individual space corresponds to spaces where you run by yourself. Out-of-class group space is analogous to spaces outside of your normally scheduled team practices where you run with a subset of people on your team. In-class group space corresponds to regularly scheduled team practices attended by the coach and all other runners on the team.

One important point to recognize in this analogy is that just because your coach knows how to run marathons doesn't mean that person is an effective coach. Indeed, imagine if your coach schedules two-hour team practice sessions twice every week. When you and your teammates show up for practice, your coach tells you to sit down on the bleachers and watch. Then, your coach runs for two hours straight and finishes a marathon while you watch them run. As you and your teammates watch the coach run, you are experiencing in-class group space and yet you are not involved in group work that has a meaningful impact on your ability to run marathons. While it is true that the coach is doing important work that contributes to their goal of running a marathon, everyone else in practice is not.

Once you can identify what type of space you are in, you can develop learning skills that take advantage of those spaces. The types of activities you do your individual space should be different than the types of work you do in group spaces. The same is also true in reverse. Group spaces provide distinct benefits to your learning that, if done well, are nearly impossible to replicate when you are in your individual spaces.

In our flipped-learning class, we develop the expectation that you exert significant effort in your individual space getting exposed to class content. By doing work on your own outside of class, you increase your capacity to contribute to group space and to strengthen group learning. The running analogy is helpful here. If you sign up for a running team that only has two team practice sessions each week, there is not enough time dedicated to in-class group space to get in marathon shape. In fact, if the only time you run is during team practice, you will limit your contributions to your team's efforts. You will not be able to keep up with other runners on the team who are running 4 – 6 days a week. You will limit your ability to identify your weaknesses, ask for help, push past your barriers, or help others who are struggling. If you do not spend sufficient time practicing in individual space, you put yourself in a position that you cannot take advantage of the unique benefits offered by in-class group space.

With these contexts in mind, it's natural to ask how to use your different spaces to support your learning most effectively and efficiently. To answer this question, we need to develop a more nuanced understanding of the different types of activities that contribute to learning.

What is active learning?

Active learning is any process in which you are doing meaningful learning activities and thinking critically about what you are doing. This is related to the definitions of [learning, deep learning, and shallow learning](#) that we explore later in this class. This is also related to [a model for deep learning](#), the [five stages of deep learning](#), and various techniques you

can use to [progress through the five stages of deep learning](#). The major idea of active learning is that you are actively engaged in knowledge construction and thinking deeply about what you are doing. When sitting through a lecture, it is very hard to engage in actively learning because the pace of the lecture makes it very hard to think. Because you are constrained by the pace at which the lecturer speaks, it's hard to actively construct new knowledge, to reflect on your learning processes, to develop questions, and to dive deeper into the material.

What is direct instruction?

An important [sidekick](#) of active learning is direct instruction. *Direct instruction* is any process where a teacher (either the teacher of the class or a fellow student playing the role of a teacher) presents material to a learner in an organized, sequenced way. This definition is broad enough to include many different types of activities including all of the following:

- Well-thought-out lectures given as monologue-style speeches from a lecturer to students sitting in the room. It's important to note that not all lectures meet our definition for direct instruction. To qualify as direct instruction, information must be presented in an organized way and thoughtfully sequenced to guide young learners. Some lecturers fail to create lectures that meet this definition.
- The teacher invites students to watch a well-organized sequence of videos that cover the course content.
- The teacher guides students to read a well-organized selection of textbook excerpts that cover course content.
- During an in-class meeting, students work together in small groups on shared problem solving. During that time, one student A asks student B a question about one of the problems that depends on some course content. After listening carefully to the question, student B presents a mini-lecture to student A to work through all details of a relevant example, field related questions, and present information that is useful to help student A develop new expertise relevant to both the original question and the problem they are working on. At that moment, student B plays the role of a teacher and provides direct instruction to student A.
- While working in individual space, student A captures a question about one of the examples covered in a YouTube video they are watching (or perhaps a section of the textbook they are reading). Student A posts this question on an online discussion forum (like CANVAS or Discord). Then, another student in the class, let's call them student C, posts a worked solution to this question that includes all the glorious details of every step of the example and a large collection of explanatory notes. Student C provides direct instruction to student A in the form of a written document that is well-organized and sequenced to guide student A to deeper understanding.

Direct instruction is not a single type of teaching. Instead, direct instruction describes a range of approaches to providing information that supports learning. The major idea of direct instruction is that a “teacher” presents new information to a student in an organized, sequenced manner to support that student in deepening their learning.

What is flipped learning?

We are now able to develop a formal definition of flipped learning. We say that *flipped learning* involves structuring a class so that your first contact with new material moves out of in-class group space and into your individual space in the form of structured, organized, sequenced active learning activities. Your work in individual space might include direct instruction but can also include problem solving, creative work, or other guided discovery processes. The resulting in-class group space is dedicated to dynamic, interactive learning activities where teacher and students work together to engage in meta-learning, apply concepts to new contexts, practice peer instruction, participate in question-and-answer sessions, get immersed in group problem solving, or undertake applied laboratory explorations.

What are the benefits of our flipped-learning model?

As discussed on page 15 of Robert Talbert's book *Flipped Learning: A Guide for Higher Education Faculty*, there are many benefits to the flipped learning model. These are laid out in “the four pillars of flipped learning, conveniently laid out as the acronym FLIP:

1. *Flexible environment*: Flipped learning is based on allowing learners to learn in different ways at different speeds, and to give learners choice in how they demonstrate evidence that they have mastered course content. Flexibility also refers to the instructors in a flipped learning environment, who are expected to be flexible in their plans, making on-the-fly adjustments for individual learners or for the entire class...
2. *Learning culture*: A flipped learning environment is a community that values the learning process in all its forms, including all the warts, with learning at the center rather than the instructor. Students in a flipped learning environment are using their precious group space on high-impact, meaningful activities that place their work at the center of attention. Meanwhile, the instructor provides scaffolding and feedback with a view not simply towards gathering numbers for a gradebook but to help students learn.
3. *Intentional content*: Materials used in flipped learning are honed to a sharp edge, with explicit connections to learning targets that are clearly stated: text, video, and online content that is tightly constructed with high educational quality and very little “fluff;” and materials are differentiated so that students at different places in their learning can work on something meaningful.
4. *Professional Educator*: An instructor in a flipped learning environment carries out a number difficult jobs. The instructor has to prepare the content and set up the learning environment. She has to observe the students as they work and know when to intervene and when to let students struggle. She has to collect formative assessment data to know where the ‘hot spots’ are as students learn and make appropriate in-the-moment adjustments. And after the fact, she should be a reflective teacher, taking time to evaluate her own performance and share her results as well as being well connected with an active community of practice, whether at her university or online or both.

What adaptations do you need to make to your learning routines to thrive in our flipped learning environment?

Lots. I am in the process of preparing a large set of learning activities designed to help you adapt yourself as a strategic deep learner. Specifically, I will be having you complete Conquering College laboratory activities designed to help you develop your meta-learning skill and thrive in this class. Not only will these activities support your work in our class, if you do these well you’ll be able to apply your growing skills to every single class you take in college. Moreover, you can apply these techniques to any part of your life in which you want to learn, grow, and improve.

If lectures are so harmful, why do so many teachers use the lecture-based model?

Now you’re starting to go deep. There is no quick and easy answer to this question. Harmful policy decisions are embedded within larger systems of oppression. The lecture-based model for instruction is just one example of this principle. One reason that many teachers use lecture is because they don’t know how to effectively implement alternative teaching techniques. To become a college professor at most universities in most subject areas requires only content expertise and no formal training in the art of teaching nor the science of learning. This is what I call the [no-training-for-college-professor problem](#).

Another issue is related to the [brains-to-hand ratio](#). Creating highly dynamic learning environment takes a ton of expertise, time, patience, energy, and love. Good teachers will adapt the learning environment to meet the needs of each and every student. This implies that a good teacher will help each student create a unique, individualized, and customized experience through dialog and by working together to create knowledge that the student values. By definition, this process can never be scalable. It is not mechanistic. It cannot be automated. Authentic learning, and by extension good teaching, is based in personal relationships and meaningful dialog. When our democratically elected representatives decide on education funding policies that place 40+ students under the care of a single instructor, that decision guarantees that the teacher will not have enough time to engage in meaningful dialog with every student under their care. Lectures are an easy way to solve this problem. Most teachers who try to imagine a different approach quickly run into psychological pain that results from being tasked with an impossible job. Thus, it’s often the healthier choice to maintain the status quo than to imagine a different reality.