How to Teach in an Age of Distraction

By Sherry Turkle | OCTOBER 02, 2015

At MIT, I teach a seminar on science, technology, and memoir. Enrollment is capped at 20 students. The atmosphere is intimate. We read memoirs by scientists, engineers, and designers, and then the students tell their own stories.

Some of them have lived hardscrabble lives. During one recent semester, their stories were particularly poignant. One had escaped with his family from the former Soviet Union. Another had overcome deep poverty; there were many nights when he had no choice but to sleep in his car. And yet, through all of this, these students had found their way to science or engineering or design. Sometimes the inspiration had come from a teacher, parent, or friend. Sometimes it came from fascination with an object — a broken-down car, an old computer, a grandfather clock. The students seemed to understand each other, to find a rhythm. I thought the class was working.

Then, halfway through the semester, a group of students asked to see me. They admitted to texting during class, but they felt bad about it because of the personal material being discussed. They said they text in all their classes, but here it
seemed wrong. We decided the class should talk about this as a group. In that discussion, more students admitted that they, too, texted in class. They portrayed constant connection as a necessity. For some, three minutes was too long to go without checking their phones. They wanted to see who was in touch with them, a comfort in itself.

We decided to try a device-free class with a break for checking messages and emails. For me, something shifted. Conversations became more relaxed and cohesive. Students finished their thoughts, unrushed. They seemed more present and able to be in an uninterrupted conversation. When they were not tempted by their phones, the students told me, they felt more in control of their attention. With phones in hand, they felt control slip away. An irony emerges. For of course, on the surface, we all see our phones as instruments for giving us greater control, not less.

A lot is at stake. Where we put our attention is not only how we decide what we will learn, it is how we show what we value.

Dropping out of a classroom conversation can begin with a moment of boredom or because a friend reaches out to you. And once you are in that "circuit of apps" (as one student called it), even the best class can’t compete.

In classrooms, the distracted are a distraction: Studies show that when students are in class multitasking on laptops, everyone around them learns less. Distraction is contagious. One college senior says, "I’ll be in a great lecture and look over and see someone shopping for shoes and think to myself, ‘Are you kidding me?’ So I get mad at them, but then I get mad at myself for being self-righteous. But after I’ve gone through my cycle of indignation to self-hate, I realize that I have missed a minute of the lecture, and then I’m really mad."
Even for those who don’t get stirred up, when your classmates are checking their mail or Amazon, it sends two signals: This class is boring, and you have permission to check out — you, too, are free to do other things online.

Despite research that shows that multitasking is bad for learning, the myth of the moment is that multitasking is a good idea. We are not inclined to let this myth die because multitasking feels good. People talk about multitaskers as addicted. But I find that discussing the power of technology in those terms makes people feel helpless. It is as though they are facing something that is by definition more powerful than they could ever be. Resistance seems futile. But many do resist. Writers, artists, scientists, and literary scholars talk about disenabling the Wi-Fi on their computers to get creative work done. In the acknowledgments of her most recent novel, Zadie Smith thanks "Freedom," a program that shuts off connectivity on the Mac.

The analogy between screens and drugs breaks down for other reasons. There is only one thing you should do if you are on heroin: Get off it. Your life is at stake. But laptops and smartphones don’t need to be removed. They are part of our creative lives. The goal is to use them with greater intention, to live with them in greater harmony.

Instead of thinking about addiction, it makes more sense to explore how we are vulnerable to certain things that technology offers. The path forward is to learn more about our vulnerabilities and design around them. To do that, we have to clarify our purpose. In education, learning is the focus, and we know that multitasking is not helpful. So it’s up to us to actively choose unitasking.

Many educators begin with an accommodation: They note that students check websites in class — and they say, fine: This is the 21st-century equivalent of doodling and passing notes. But some do
more than accommodate the distractions of digital media. They take students’ new practices and see them as an opportunity to teach in a new way. And then they call this progress.

The Duke University literary theorist Katherine Hayles argues that fractured attention is the sensibility of our age and that to look back to "deep attention" is to be unhelpfully nostalgic. Students, says Hayles, think in a new mode, the mode of "hyper attention." Educators have a choice: "Change the students to fit the educational environment or change that environment to fit the students."

For Hayles, there is no real choice. Education must embrace the culture of hyper attention. As an example of a constructive way to do this, Hayles points to experiments at the University of Southern California in a classroom outfitted with screens.

One mode of interaction is "Google jockeying": While a speaker is making a presentation, participants search the web for appropriate content to display on the screens — for example, sites with examples, definitions, images, or opposing views. Another mode of interaction is "backchanneling," in which participants type in comments as the speaker talks, providing running commentary on the material being presented.

Google jockeying speaks to our moment. Students want to turn away from class when there is a lull. Google jockeying implicitly says, all right, we will get rid of those lulls. Even experienced faculty start to ramp up their PowerPoint presentations in a spirit (not always acknowledged) of competing with students’ screens. Or we tell students, as Hayles suggests, to go to the web during class.
But there is another way to respond to students who complain that they need more stimulation than class conversation can provide. It is to tell them that if they have a moment of boredom, it means that something is being asked of them: They must go inward and draw upon their imaginative life. We can tell them what we now know to be true: A moment of boredom is an opportunity for new thinking. But it can be short-circuited if you go to the web.

If boredom happens in a classroom, rather than competing for student attention with ever-more extravagant technological fireworks, we should encourage students to stay with their moment of silence or distraction. We can try to build their confidence that such moments — where you stay with your thoughts — have a payoff. They give time to engage with yourself and with the subject. We can present classrooms as places where you can encounter boredom and "walk" toward its challenges.

A chemistry professor puts it this way: "In my class I want students to daydream. They can go back to the text if they missed a key fact. But if they went off in thought ... they might be making the private connection that pulls the course together for them."

Those who are fluent in both deep attention and hyper attention have the advantage of attentional pluralism; they can switch between the two, depending on what is needed. That fluency should be our educational goal. But it’s hard to achieve. Hyper attention is not only easier, it feels good. And without practice, we lose the ability to summon deep attention.
When you train your brain to multitask as your default approach — when you choose hyper attention — you won’t be able to focus even when you want to. You’re going to have trouble sitting and listening to your children tell you about their day at school. You’re going to have trouble sitting in a meeting and listening to your colleagues. Their narrative will seem painfully slow. Just as middle-school children don’t acquire the skills for conversation because they lack practice, university students lose the capacity to sit in a class and follow a complex argument.

Research shows that when people watch online educational videos, they watch for six minutes, no matter how long the video. So videos for online courses are being produced at six minutes. But if you become accustomed to getting your information in six-minute bites, you will grow impatient with more-extended conversations.

Maryanne Wolf, a cognitive neuroscientist at Tufts University, had long observed students’ fractured attention spans, but did not feel personally implicated until one evening when she sat down to read *The Glass Bead Game* by Hermann Hesse, one of her favorite authors. Wolf found it impossible to focus. She panicked and wondered if her life on the web had cost her this ability. She began to study what skimming, scanning, and scrolling do to our ability to read with attention — what she calls "deep reading." Her thesis is that a life lived online makes deep attention harder to summon. This happens because the brain is plastic — it is constantly in flux over a lifetime — so it "rewires" itself depending on how attention is allocated.

If the brain is plastic, then at any age it can be set to work on deep attention. So if we decide that deep attention is a value, we can cultivate it. Indeed, that is what Wolf discovered for herself. After two weeks of effort, she was again able to focus
sufficiently to immerse herself in reading Hesse. Wolf’s experience suggests a pedagogy that supports unitasking and deep reading. But if we value those skills, we have to actively choose them.

Carol Steiker, a professor at Harvard Law School, is committed to a particular form of unitasking: that which follows naturally when students take class notes by hand. For many years, she allowed her students to take notes on laptops, as they had done as undergraduates. If a student couldn’t pay attention in a law class, that would soon become the student’s problem: He or she would not be prepared when called on and wouldn’t understand the material as well as the others.

But Steiker’s position has changed radically. She saw that students taking notes with computers suffered from more than inattention. They were losing the ability to take notes at all. They "seemed compelled to type out the full record of what was said in class," she said. "They were trying to establish transcripts of the class." Students were becoming court stenographers. But she wants note-taking to help students integrate the themes of her class. For her, note-taking trains students to organize a subject in a personal way. It cultivates an art of listening and thinking that is important to future lawyers.

Steiker says that the urge to "transcribe" had a curious side effect: Her law students didn’t want to be interrupted in class. Steiker says: "They sometimes seemed annoyed if you called on them because it broke up their transcriptions. If your notes are meant to capture the themes of the class, you remember your participation and you make it part of the story. If you are trying to write a transcript of class, class participation takes you away from your job."

Now Steiker allows no technology in any of her classes. In a device-free class, she says, "the students seem less annoyed when you call on them." She’s optimistic, convinced that taking notes by hand is forcing her students to be better listeners.
If you tried to design an educational technology perfectly suited to the sensibilities of hyper attention, you might come up with the MOOC, or massive open online course. Yet after *The New York Times* designated 2012 as the Year of the MOOC, an irony emerged. Research shows they work best when combined with the least measurable element of a traditional classroom: presence. Even in the most technical subjects, such as calculus, students in online classes do better when they include face-to-face encounters. The director of a Columbia University study that compared online and face-to-face learning sums up its findings: "The most important thing that helps students succeed in an online course is interpersonal interaction and support."

Since students struggle with conversation, it makes sense to engage them in it. Conversations teach attention, how to listen, how to be in a relationship. Educational technology, with all its bells and whistles, only highlights the simple power of conversation.
Many who were behind early MOOC initiatives saw the traditional classroom as a problem that technology could solve. Daphne Koller, a co-founder of Coursera, saw traditional "live" classrooms as places that silence students. "When a question is asked in a ‘live’ course," says Koller, "some students are online, shopping for shoes on Amazon, some are not paying attention, some smarty-pants in the front row answers the question before the rest of the class even has had a chance to know a question has been asked." In an online course, on the other hand, everyone has a chance to ask a question and get feedback. Your question will never be pre-empted. For Koller, the lack of "live" presence creates a new equality. With no one there, everyone can be "heard." No one in the front row will upstage you.

As Koller sees it, "flipped" classrooms — combining online work with in-class discussions — should result in students’ spending more time with professors in a setting of real interaction. Students would have learned the basic content online before the class even meets. Now, together, they are free for a deeper interaction.

Unfortunately, it doesn’t always work that way. The "discussion sections" in blended classrooms are often with teaching fellows, with the professor moving from group to group. A student in an MIT class acknowledges that she gets to listen to the professor speak in an online video, but she wishes she could hear him lecture in person. He is an international figure and has a reputation for being charismatic. She feels she is missing out.

Her reaction is not surprising. If you ask people where their love for learning comes from, they usually talk about an inspiring teacher. The most powerful learning takes place in relationship. What kind of relationship can you form with a professor who is lecturing in the little square on the screen?
Administrators look at the dwindling numbers of students who show up to lectures and draw the reasonable conclusion that if the class were offered online, students would prefer to take it there. Students report more-complex attitudes: Even if they miss classes, they are not eager to trade in their classrooms.

They tell me they want company. They are afraid that they already spend too much time alone and online. They say they need structure. One says: "I am going to listen to the lecture anyway. I have to. I don’t want to do it all lonely and maybe sad. I’d rather go with my friends. I’m in college!" Another says: "To motivate myself to sit alone and sit in front of the computer? No matter how motivated I am, to block out an hour, it would be so hard. I like the idea that I have to show up. You’re showing up to something alive."

When this student talks about the value of "showing up to something alive," he is not denying the value of what you can learn online or what can be measured online. Rather, he is suggesting that there is another kind of learning not so easily measured. If you go to class you might see something unexpected.

The lecture is the easiest form of in-person pedagogy to criticize. It is the oldest form of instruction. It is the one most likely to involve a passive student. It is also easiest to caricature, as the teacher might be passive as well, perhaps reading notes that were written years ago.

But for all its flaws, the lecture has a lot going for it. It is a place where students come together, on good days and bad, and form a small community. As in any live performance, anything can happen. An audience is present; the room is engaged. What makes the greatest impression in a college education is learning how to think like someone else, appreciating an intellectual personality, and thinking about what it might mean to have one of your own. Students watch a
professor thinking on her feet, and in the best cases can say: "Someday I could do that." What the young man meant by showing up to "something alive" was really showing up to someone alive — a teacher, present and thinking in front of him.

Even these days, when students talk about large, introductory lecture classes, they mention the importance of being there. A college junior: "I took an introduction-to-psychology class, it was big and I could see it might have been a MOOC, but there was something about being there with all those people. You are part of a group. That’s where you make your friends. You talk about the class." And of course, you are there with the professor.

During a panel discussion about the ethics of pedagogy, the Tufts University literary theorist Lee Edelman said that his biggest challenge as a professor "is not teaching his students to think intelligently, but getting them to actually respond to each other thoughtfully in the classroom." Like so many others, he finds that students struggle with the give and take of face-to-face conversation.

Human-resources officers tell me that their new hires have a hard time talking in business meetings. College graduates say the same thing about themselves.

Why would we want to put at the center of our educational agenda a kind of learning in which we don’t teach the skill of raising hands and entering a conversation? If doing this makes our students nervous, perhaps our job as educators should be to help them get over it.
Ideally college classrooms are places where students stand up and defend their ideas in real time. They learn from speaking and from listening. That doesn’t happen if you take your class alone in your room. The value of attending a live lecture is a bit like the value of doing fieldwork: In fieldwork, there can be dry spells, but you learn to read people in real time. You share a bit of road with those around you, and you come to understand how a group thinks. And you learn the rewards of patience: You have followed arguments as they unfold. If you are lucky, you learn that life repays close, focused attention.

In a recent course, I required students to collaborate on a midterm project. I imagined them in conversation, working together at long tables in a dining hall. I imagined late nights and cold coffee in Styrofoam cups. But there were no late nights or long tables. All the collaboration happened on Gchat and in Google Docs.

When my students handed in their projects, their work was good. But when I gave out the assignment, I was interested in more than the final product. I know that the alchemy of students sitting around a table can sometimes spark a conversation that leads to a new idea. Instead, my students found an app that made presence unnecessary. They had a task; they accomplished it with efficiency.

My experience in that course is a case study of why measurements of productivity in higher education are dicey. Gchat and Google Docs got the job done by classical "productivity" measures. But perhaps the value of what you produce, what you "make" in college, is not just the final paper — it’s the process of making it.

My students are unapologetic about not meeting in person. Jason, a sophomore, says: "The majority of my studying in the past year has been that someone makes a Google Doc with the terms that need definitions, you fill in the ones you know,
and then you work on it together. You have a chat session and you do that to collaborate." This joyless description made me rethink my fantasy of long tables, cold coffee, and late nights. My fantasy, from his point of view, asked for the unnecessary. But his reality allowed little space to talk about a new idea.

Sometimes, students who collaborate with online chat and electronically shared documents work in the same building. They simply choose not to study in the same room at the same table. They go into online chat sessions rather than chat in person. Why? For one thing, they tell me, roles can be made clear, and it is also clear when someone falls behind. More important, when you collaborate online, everyone stays on point. People may drop out to text or shop online, but when they are on the chat, they are on topic. In a face-to-face meeting, you can see people’s attention wander off to their phones. On Gchat, the inattention of your peers is invisible to you. Gchat lets the simulation of focused attention seem like attention enough.

But it doesn’t leave room for what I want my students to experience when they collaborate. I call it intellectual serendipity. It may happen when someone tells a story or a joke. Or when someone daydreams and comes back with an idea that goes in a new direction. None of this is necessarily efficient. But so many of our best ideas are born this way, in conversations that take a turn.

Given an opportunity to collaborate, my students glide toward the virtual. Some tell me that anything else, regardless of the merits, is impractical in today’s college environment. Everyone is too "busy." I can’t help but think that talking in-person is one of the things they should be busy with.

In my interviews with students, most insist that they will know when they have to schedule a face-to-face meeting. But you really don’t know when you are going to have an important conversation. You have to show up for many conversations
that feel inefficient or boring to be there for the conversation that changes your mind.

When the psychologist Daniel Kahneman won the Nobel in economic science, he was, like every winner, asked to write an official biographical statement. One section of his biography is a tribute to his late colleague, Amos Tversky. Kahneman explained that the ideas for which had he won the prize grew out of their time spent working together. In the end, his Nobel biography amounts to a love letter to conversation.

We spent hours each day, just talking. When Amos’s first son Oren, then fifteen months old, was told that his father was at work, he volunteered the comment "Aba talk Danny." We were not only working, of course — we talked of everything under the sun, and got to know each other’s mind almost as well as our own. We could (and often did) finish each other’s sentences and complete the joke that the other had wanted to tell, but somehow we also kept surprising each other.

Collaboration is a kind of intimacy. You don’t just get more information. You get different information.

What also is striking in Kahneman’s Nobel biography is his description of the pace of his work with Tversky. In 1974, Kahneman and Tversky wrote an article for Science that went on to be one of the founding documents of behavioral economics. It took them a year, working four to six hours a day. Kahneman writes, "On a good day we would mark a net advance of a sentence or two." So the people who support conversation because they think it will make things go faster — "Don’t email me, it’s faster just to come to my desk and ask
me!" — are only seeing a small part of what makes face-to-face conversation powerful. For Kahneman and Tversky, conversation wasn’t there to go faster, but to go deeper.

College should be a time to invest in teaching students about the long-term value of open-ended conversations, but in today’s environment, it is hard to argue the value of conversation because it is hard to measure with productivity metrics, especially in the short term.

Adam Falk, president of Williams College, has given it a try. He argues that what really matters in a college education is learning "to write effectively, argue persuasively, solve problems creatively," and "adapt and learn independently." And then he and his colleagues investigated where those skills blossom. It turns out that they correlate with the amount of time students spend with professors — not virtual contact, but live contact. Given Falk’s findings, it is painful to hear faculty complain that students don’t show up for office hours.

Students avoid faculty in large part because they are anxious about the give and take of face-to-face conversation.

Zvi, a college junior, says he is not comfortable with conversation and he doesn’t see office hours as a time to practice. "I’m much better emailing professors than in person. I find that I don’t represent myself well. … I am not natural with serious conversation [in person] yet. I’d prefer to be able to do that [in email]." He says that in email, his editing and "working on it" will be invisible.

When asked when he might learn to have serious, in-person conversations, Zvi says it’s a skill he’ll need to develop soon, not just to talk to professors, but also to potential future employers. He thinks that he might try to talk with professors in
his final year of college. But then he considers the reality of actually sitting down with a professor and despairs: "It’s too late for that. I don’t know — when do you grow up? It is a question."

When students like Zvi say they want to email me rather than see me in person, they usually say that it is in email that they can best explain their ideas. And that will put me in the best position to improve their ideas. They cast our meeting in transactional terms: Zvi has ideas; the professors have information that will make them better. But there’s more to gain from a visit to a professor than explaining your ideas. You get to be with someone who is making an effort to understand you. You may feel the support of an adult and of your institution.

Zvi says that he stays away from professors because he doesn’t feel grown up enough to talk to them. His professors might be able to help him with that, but not because they’ll give him information. Studies of mentoring show that what makes a difference, what can change the life of a student, is the presence of one strong figure who shows an interest, who, the student would say, "gets me." You need a conversation for that.

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